

## APPENDIX A

### EVALUATION OF HISTORICAL NAPL SURVEY DATA ON TABLE 4-0c

Technical Memorandum (revised) – Evaluation of September 1999 DNAPL Thickness  
Data Listed on Table 4-0c, Sauget Area 1, Groundwater Services, Inc., January 21,  
2005

## TECHNICAL MEMORANDUM *(revised)*

**TO:** Dr. Richard S. Williams, Solutia Inc.

**FROM:** James A. Kearley

**RE:** Evaluation of September 1999 DNAPL Thickness Data on Table 4-0c  
Sauget Area 1, Sauget and Cahokia, Illinois

### 1.0 INTRODUCTION AND BACKGROUND

From September 1999 to April 2000, sampling and testing activities were conducted to investigate impacts to environmental media resulting from disposal/deposition of materials in Sauget Area 1 and to assess the associated risk to human health and the environment. Environmental contractors conducted the work on behalf of a group of potentially responsible parties (PRPs). During September 28-30, 1999, a contractor measured fluid levels and total depths at 38 wells and piezometers, all of which were screened in the shallow or middle hydrogeologic units (SHU or MHU) of the alluvial aquifer. According to the field notes from this survey, many of these wells and piezometers reportedly contained a significant thickness of pooled DNAPL. The PRPs' technical staff believed that these DNAPL thickness measurements were not reliable because pooled DNAPL was not observed during well development and sampling in October 1999. However, no further work was performed at the time to refute the DNAPL thickness data in the September 1999 field notes.

A copy of the September 1999 field notes was included in the Field Sampling Report for the Sauget Area 1 investigations (O'Brien & Gere, 2000), but the survey results were not discussed in the Sauget Area 1 Engineering Evaluation/Cost Analysis and Remedial Investigation/Feasibility Study (the EE/CA and RI/FS report). The EE/CA and RI/FS report (Roux Associates, 2001) did discuss the potential for DNAPL occurrence at Sauget Area 1 based on analysis of several indicators. The indicators included increasing COC concentrations with depth, presence of COCs deep in the alluvial aquifer, and presence of some COCs at concentrations in excess of 1% of the pure-phase solubility. Based on this information, the conceptual model for DNAPLs at that time was described as follows:

*It is expected that much of the DNAPL mass at Sauget Area 1 is trapped by capillary forces within the alluvial aquifer pore space as small, discrete blobs and ganglia. However, some free-phase DNAPL may have migrated to the bedrock surface, where it may be present in free-phase pools.*

The EE/CA and RI/FS report also discussed the presence or potential presence of pooled DNAPL observed at two bedrock wells (BR-G and BR-I) that were installed in 2000.

The DNAPL data from the September 1999 field notes were tabulated and presented in Table 4-0c in an EE/CA and RI/FS report prepared by a contractor to the US Army Corps of Engineers for the USEPA (Adrian Brown, 2001). In a letter dated January 9, 2003, the USEPA requested that the PRPs perform a DNAPL investigation at Sauget Area 1. The DNAPL characterization study at Sauget Area 1 has recently been completed, in accordance with the approved Work Plan (GSI, 2004).

As documented in this memorandum, the September 1999 DNAPL thickness data are not reliable and do not accurately represent conditions within the SHU and MHU of the alluvial aquifer. This conclusion is based on results of a May 2004 NAPL survey and several sources of information that were available in 1999-2000, including: i) the absence of visual observations of pooled DNAPL in field notes from well development and sampling in October 1999; ii) the absence of low-permeability layers within the alluvial aquifer that could account for significant pooling of DNAPL in the SHU and MHU; iii) groundwater analytical results from certain wells that appear to be inconsistent with the reported presence of significant thickness of pooled DNAPL in those wells; and iv) the reported presence of pooled DNAPL in the SHU and MHU at locations near Site N.

An earlier version of this memorandum dated August 4, 2004 was previously submitted to USEPA. The memorandum has been revised to address comments received from USEPA in a letter dated September 16, 2004.

#### ***Key Finding of this Memorandum***

Based on review of all available information, it is our opinion that the only reliable data in the September 1999 field notes regarding NAPL occurrence is the visual observation of free product (now known to be LNAPL) at well EE-11. We believe that pooled DNAPL was not widely present during September 1999 within the wells and piezometers screened in the shallow and middle hydrogeologic units of the alluvial aquifer.

## **2.0 EVALUATION OF SEPTEMBER 1999 FIELD NOTES**

The field notes from the well survey conducted in September 1999 (see Attachment 1 of this memo) were included in Volume 9 of the Field Sampling Report for Sauget Area 1 (O'Brien & Gere, 2000).

Scope of the September 1999 NAPL Survey: A total of 38 locations were measured during the NAPL survey, including fourteen shallow monitoring wells and twenty-four small-diameter piezometers. The field notes include the following information: date and time of measurements; air monitoring readings from a photo-ionization detector (PID); depth to water in feet below grade; total well/piezometer depth in feet below grade; and measurements of depth to top of DNAPL and depth to base of DNAPL in feet. The downhole soundings were taken with an interface probe, but the make and model of the

interface probe were not identified in the notes. Inspection of the interface probe tape was the apparently only method for visual confirmation of NAPL presence. There were no indications in the notes that other methods (i.e., clear bailers or weighted cotton string) were used for further visual confirmation of NAPL presence. As shown below, the field notes indicate that the well soundings were taken at a rapid pace. This suggests that the survey may have been performed in a hurried manner.

| Measurement Date | Survey Duration (minutes) | Wells/Piezometers Measured | Avg. Time per Well/Piezometer (minutes) |
|------------------|---------------------------|----------------------------|---|
| 9/28/99          | 125                       | 17                         | 7.4                                     |
| 9/29/99          | 70                        | 6                          | 11.7                                    |
| 9/30/99          | 160                       | 15                         | 10.7                                    |

**NAPL Survey Results:** Measured total depths ranged from to 9.85 feet to 60.08 feet. Based on this range of total depths, all the wells and piezometers were screened in either the SHU or MHU of the alluvial aquifer. Based on well soundings using the interface probe, pooled DNAPL was reported to be present at 33 of the 38 wells and piezometers. The maximum reported thickness of pooled DNAPL was 23.29 feet at well EE-01. DNAPL thickness of three feet or more was reported to be present in 24 of the 38 wells and piezometers.

At seven piezometers, it was reported that there were two or three separate layers of pooled DNAPL. For example, the field notes included the following data for piezometer P1-A-M.

| Data Reported for Piezometer P1-A-M |                                    |
|-------------------------------------|------------------------------------|
| Depth to water                      | 20.54 ft                           |
| First interval of DNAPL             | 21.60-24.89 ft (thickness=3.29 ft) |
| Second interval of DNAPL            | 36.31-37.71 ft (thickness=1.40 ft) |
| Third interval of DNAPL             | 39.08-40.42 ft (thickness=1.34 ft) |
| Total depth of well                 | 40.42 ft                           |

The only visual observation of NAPL recorded in the September 1999 field notes was for well EE-11. The field notes indicated that free product was present at EE-11 from "10.27 feet down" and stated that the "Well has free product in it! Brown oily liquid." This observation was apparently based on inspection of the interface probe after it was removed from EE-11.

**GSI's Evaluation of the September 1999 Field Notes:** NAPL was certainly present in well EE-11, based on the visual observation of free product recorded in the field notes. As discussed in Section 3.0 of this memorandum, NAPL was found at well EE-11 during the May 2004 survey and was confirmed to be LNAPL and not DNAPL.

If a significant thickness of pooled DNAPL had actually been present in other wells and piezometers measured in September 1999, then there should have been additional visual observations of free product on the interface probe. No visual observations of

NAPL were recorded in the field notes, except at EE-11. The absence of visual observations of free product on the interface probe at other wells calls into question the reliability of the DNAPL thickness data in the September 1999 field notes.

The reported presence of multiple distinct layers of pooled DNAPL in seven piezometers also raises concerns about the reliability of the DNAPL soundings. When pooled DNAPL is present in a well, it is typically encountered in a single layer at the bottom of the well, not in multiple layers distributed within the water column.

### **3.0 RESULTS OF MAY 2004 AND OCTOBER 2004 NAPL SURVEYS**

As requested by the PRP group, Groundwater Services, Inc. (GSI) performed a NAPL survey at Sauget Area 1 in May 2004. The survey included 57 wells and piezometers and was conducted in accordance with the procedures outlined in Task 2 of the Work Plan for DNAPL Characterization and Remediation Study (GSI, 2004). C2M Hill, a USEPA contractor, was present for oversight of the survey.

NAPL Survey Procedures: At each well and piezometer, the survey included measurement of depth to water and a check for the presence and thickness of accumulated LNAPL and pooled DNAPL using an electronic interface probe. A disposable clear bailer was lowered to the water level in each well to check for the possible presence of accumulated LNAPL. A visual check for pooled DNAPL was performed by lowering a weighted cotton string to the bottom of the well, then retrieving the string to inspect for evidence of staining. Finally a disposable clear bailer was lowered to the bottom of each well to check for the presence of pooled DNAPL. New string, bailer, and bailer cord were used for each well, and soiled string, bailers, and cord generated during the survey were placed in a designated container for management as investigation-derived waste.

Results of May 2004 NAPL Survey and NAPL Recovery Tests: Of the 57 wells and piezometers surveyed in May 2004, three were bedrock wells (BR-G, BR-H, and BR-I) and 54 were screened in the SHU or MHU of the alluvial aquifer. Two of the bedrock wells (BR-G and BR-I) showed some evidence of the presence of a small amount of pooled DNAPL, but no free product was recovered from BR-G or BR-I during recovery tests conducted in May 2004. NAPL survey and recovery test results for the bedrock wells will be discussed in the project report for the Sauget Area 1 DNAPL characterization study.

Of the 54 wells and piezometers screened in the SHU and MHU that were measured in May 2004, only well EE-11 was found to contain free product (see Table 2-1 in Attachment 2). Well EE-11 contained a dark brown LNAPL that appeared to be a petroleum hydrocarbon, based on color and odor. The well contained as much as 8 to 9 feet of LNAPL. A total of approximately one gallon of LNAPL was removed from EE-11 during a recovery test conducted on 5/19/04. Well EE-11 went dry after only a relatively short period of pumping. Fluid levels in EE-11 were re-measured on 5/20/04 and at that time well EE-11 had a layer of LNAPL approximately 0.2 feet thick. A total of

approximately 1/4 cup of LNAPL (0.02 gallons) was removed from EE-11 during the recovery test conducted that day. A sample of LNAPL recovered from EE-11 on 5/19/04 was retained for chemical analysis and physical properties testing. Laboratory testing results will be documented and discussed in the project report for the Sauget Area 1 DNAPL characterization study.

A second NAPL survey was conducted at Sauget Area 1 in October 2004, but this survey provided little new information regarding the wells and piezometers screened in the SHU and MHU of the alluvial aquifer. The October 2004 NAPL survey focused on the newly installed bedrock piezometers and the three previously existing bedrock wells (BR-G, BR-H, and BR-I). The only shallow wells that were checked were EE-11 and piezometer A1-17. Evidence of LNAPL was observed on a clear bailer lowered into shallow well EE-11, but no LNAPL could be recovered. There was no evidence of LNAPL or DNAPL during measurements at A1-17.

#### ***Results of May 2004 NAPL Survey***

During the May 2004 NAPL survey there was some evidence of pooled DNAPL in two bedrock wells, and an accumulation of LNAPL was found at shallow well EE-11. However, no evidence of pooled DNAPL was found at any of the 54 wells and piezometers screened in the SHU and MHU of the alluvial aquifer.

#### **4.0 SITE INFORMATION THAT CONFLICTS WITH DNAPL THICKNESS DATA**

Several sources of information that were available in 1999-2000 suggest that the DNAPL thickness data in the September 1999 field notes are not reliable. The lines of evidence include: i) the absence of visual observations of pooled DNAPL in field notes from well development and sampling; ii) the absence of low-permeability layers within the alluvial aquifer that could account for significant pooling of DNAPL in the shallow and middle hydrogeologic units of the alluvial aquifer; iii) groundwater analytical results for certain wells that appear to be inconsistent with the presence of significant thicknesses of pooled DNAPL at those wells; and iv) the reported presence of pooled DNAPL near Site N, which is not considered to be a significant DNAPL source area.

##### **4.1 No Free Product Observed During Well Development and Sampling**

Well development and groundwater sampling at Sauget Area 1 began a few days after completion of the September 1999 NAPL survey. During October 4-6, 1999, eleven existing wells were developed to remove sediment (see field notes in Attachment 3). As summarized on the table below, the field notes for well development included no visual observations of free product. However, there was a statement in the field notes from October 5, 1999, that the interface probe made a tone indicating the presence of DNAPL at well EEG-104, when in fact no DNAPL was found to be present. This shows that interface probe soundings can sometimes provide false positives of pooled DNAPL.

| Data from September 1999<br>Field Notes |                                  | Observations During Well Development<br>(October 4-6, 1999) |   |
|---|----------------------------------|---|---|
| Well ID                                 | Reported DNAPL<br>Thickness (ft) | Free Product<br>Observed?                                   | Other Statements in Field Notes<br>Regarding NAPL                     |
| EE-03                                   | 20.78                            | No  | -   |
| EE-05                                   | Well not measured                | No  | -   |
| EEG-101                                 | 9.19                             | No  | -   |
| EEG-102                                 | 9.20                             | No  | -   |
| EEG-104                                 | 12.73                            | No  | "Gauge went off but no DNAPL"<br>(see p. 52 of notes in Attachment 3) |
| EEG-106                                 | 10.35                            | No  | -   |
| EEG-107                                 | 18.54                            | No  | -   |
| EEG-108                                 | 19.38                            | No  | -   |
| EEG-109                                 | 11.87                            | No  | -   |
| EEG-110                                 | 13.14                            | No  | -   |
| EEG-112                                 | 11.04                            | No  | -   |

During October 7-13, 1999, groundwater samples were collected from eleven existing monitoring wells. The field notes indicate that odors and/or discoloration were observed in groundwater removed from some wells, at the start of purging and/or at the time of sampling. A sheen was observed in groundwater removed from two of the wells. However, no pooled DNAPL was observed during purging and sampling of these wells.

| Data from September 1999<br>Field Notes |                                     | Observations During Purging and<br>Sampling of Wells (October 7-13, 1999) |   |                                       |
|---|-------------------------------------|---|---|---------------------------------------|
| Well ID                                 | Reported<br>DNAPL<br>Thickness (ft) | Description of<br>Water at Start<br>of Purging                            | Description of Water at<br>Time of Sampling | Sheen or<br>Free Product<br>Observed? |
| EE-01                                   | 23.29                               | Dark gray;<br>odor  | Clear w/ black sediment;<br>odor            | No                                    |
| EE-03                                   | 20.78                               | Light brown;<br>no odor   | Clear w/ brown particles;<br>no odor        | No                                    |
| EE-05                                   | Well not<br>measured                | Clear;<br>chemical odor   | Clear;<br>chemical odor                     | Trace sheen                           |
| EEG-101                                 | 9.19                                | Light brown;<br>alcohol odor  | Clear;<br>no odor                           | No                                    |
| EEG-102                                 | 9.20                                | Rust;<br>no odor  | Clear;<br>no odor                           | No                                    |
| EEG-104                                 | 12.73                               | Gray;<br>no odor  | Clear;<br>slight odor                       | No                                    |
| EEG-106                                 | 10.35                               | Clear;<br>no odor   | Clear;<br>no odor                           | No                                    |

| Data from September 1999<br>Field Notes |                                     | Observations During Purging and<br>Sampling of Wells (October 7-13, 1999) |   |                                       |
|---|-------------------------------------|---|---|---------------------------------------|
| Well ID                                 | Reported<br>DNAPL<br>Thickness (ft) | Description of<br>Water at Start<br>of Purging                            | Description of Water at<br>Time of Sampling | Sheen or<br>Free Product<br>Observed? |
| EEG-107                                 | 18.54                               | Brown/black;<br>odor  | Yellow;<br>odor                             | Waxy sheen                            |
| EEG-109                                 | 11.87                               | Gray;<br>no odor  | Clear;<br>no odor                           | No                                    |
| EEG-110                                 | 13.14                               | Clear;<br>no odor   | Clear;<br>no odor                           | No                                    |
| EEG-112                                 | 11.04                               | Clear;<br>no odor   | Clear;<br>no odor                           | No                                    |

GSI reviewed field notes from static water level surveys conducted December 28, 1999; March 2-3, 2000; and June 26-27, 2000. Total depths were measured during the December 1999 survey, indicating that a probe was lowered to the bottom of each well during that survey. Total depths were not measured during the March and June 2000 surveys. The field notes indicate that free product was observed on the probe at well EE-11 on March 3, 2000. The notes for the survey performed on March 3, 2000 include the following observations at well EE-11:

*probe/tape have brown liquid on it as it is w/drawn from the well – appearance is similar to thin molasses; odor is noticed as probe/tape [is] cleaned off.* (see p. 159 on field notes in Attachment 3).

There were no other observations of free product in the notes from December 1999, March 2000, or June 2000. During our review of field notes from 1999-2000, GSI found no indication that free product was ever observed on the interface probe at any of the wells listed in the September 1999 field notes, other than well EE-11. The absence of other visual observations of free product recorded in the field notes from 1999-2000 calls into question the reliability of DNAPL thickness data in the September 1999 field notes.

#### 4.2 Absence of Low-Permeability Layers within the Alluvial Aquifer

The wells and piezometers listed in the September 1999 field notes are screened within the alluvial aquifer. The alluvial aquifer, which is divided into three hydrogeologic units, is underlain by limestone bedrock that typically begins at approximately 105 to 110 feet below grade.

| Hydrogeologic Unit<br>of Alluvial Aquifer | Approx. Depth Interval<br>(ft below grade) | Primary Soil Classifications     |
|---|--|----------------------------------|
| Shallow (SHU)                             | 0-30 ft                                    | Fine to medium sand              |
| Middle (MHU)                              | 30-70                                      | Medium to coarse sand            |
| Deep (DHU)                                | 70-Bedrock                                 | Medium to coarse sand and gravel |

The wells listed in the September 1999 field notes have total depths ranging from approximately 20 to 33 feet below grade, generally corresponding to the SHU. The piezometers listed in the September 1999 field notes have total depths ranging from approximately 10 to 60 feet below grade, corresponding to the SHU and MHU. For significant pooled DNAPL accumulations to be present in these wells and piezometers, there would need to be one or more laterally continuous low-permeability layers underlying the wells and piezometers to serve as barriers to downward migration of pooled DNAPL.

The depth to the bedrock surface is significantly deeper than the total depths of the wells and piezometer listed in the September 1999 field notes. Pooling of DNAPL on top of the bedrock surface could not plausibly account for the reported accumulations of DNAPL listed in the September 1999 field notes. Based on our review of boring logs from Sauget Area 1 (see examples in Attachment 4) there are no low-permeability layers within the alluvial aquifer that could explain the significant thicknesses of pooled DNAPL recorded in the September 1999 field notes.

#### 4.3 Certain Groundwater Data Not Consistent with Presence of DNAPL

Concentrations of total VOCs and total SVOCs in groundwater at Sauget Area 1 are presented on Figures 4-18 and 4-19 in the Sauget Area 1 EE/CA and RI/FS report (Roux Associates, 2001). These maps (see Attachment 5 of this memo) indicate that some wells have elevated concentrations of VOCs and/or SVOCs in groundwater. However, GSI identified eight wells where there were minimal or no VOC and SVOC impacts in groundwater, but which were reported to have significant pooled DNAPL thickness, according to the September 1999 field notes.

The reported presence of 8.44 to 19.38 feet of pooled DNAPL in these eight wells is not consistent with the groundwater analytical results for VOCs and SVOCs listed in the table below. Furthermore, it is unlikely that the monitoring wells screened in the SHU and MHU at Sauget Area 1 would have been sampled if they contained significant pooled DNAPL thickness.

| Well ID    | DNAPL Thickness<br>from the September<br>1999 Field Notes (ft) | Total VOCs in GW from<br>Fig. 4-18 (ug/L) | Total SVOCs in GW<br>from Fig. 4-19 (ug/L) |
|------------|--|---|--|
| EE-04 **   | 8.44   | ND  | ND   |
| EE-20 **   | 14.88  | ND  | 1.2  |
| EEG-101    | 9.19   | ND  | ND   |
| EEG-102    | 9.20   | 11  | 68   |
| EEG-104    | 12.73  | ND  | ND   |
| EEG-108 ** | 19.38  | 13  | ND   |
| EEG-110    | 13.14  | 3.2                                       | ND   |
| EEG-112    | 11.04  | 4.7                                       | 1.1  |

\*\* = Groundwater samples collected using Geoprobe equipment at locations adjacent to the wells.

#### 4.4 Reported Presence of Pooled DNAPL Near Site N

The September 1999 field notes reported that pooled DNAPL was measured in 1999 at five of the six piezometers located in the vicinity of Site N (see Figure 2 in Attachment 1).

| Piezometer ID | Approx. Distance from Site N Boundary (ft) | DNAPL Thickness from September 1999 Field Notes (ft) |
|---------------|--|--|
| P3-B-S        | 300  | 2.71   |
| P3-B-M        | "  | 3.24   |
| P3-B-D        | "  | No DNAPL   |
| P3-A-S        | 900  | 1.55   |
| P3-A-M        | "  | 3.67   |
| P3-A-D        | "  | 3.79   |

Based on previous investigations and historical information regarding past usage, Site N is not considered to be a significant DNAPL source area. The reported presence of 1.55 to 3.79 feet of pooled DNAPL in piezometers located 900 feet beyond the boundaries of Site N is very surprising and should raise questions about the reliability of the data in the September 1999 field notes.

#### **Conclusions Regarding DNAPL Thickness Data in September 1999 Field Notes**

The DNAPL thickness values in the September 1999 field notes (which were tabulated in Table 4-0c) are not reliable data. We believe that pooled DNAPL was not widely present in September 1999 within the wells and piezometers screened in the shallow and middle hydrogeologic units of the alluvial aquifer.

One possible explanation for the questionable DNAPL measurements is that a defective interface probe may have been used during the September 1999 survey.

#### REFERENCES

- Adrian Brown, 2001. Engineering Evaluation/Cost Analysis, Remedial Investigation/ Feasibility Study, Sauget Area 1, Volume 1, Revision 2, September 28, 2001.
- Groundwater Services, Inc., 2004. Workplan for DNAPL Characterization and Remediation Study, Sauget Area 1 Sites, Sauget, Illinois. April 1, 2004.
- O'Brien & Gere Engineers, 2000. Soil, Ground Water, Surface Water, Sediment, and Air Sampling Field Sampling Report, Sauget Area 1, Volumes 3 and 9, July 2000.
- Roux Associates, 2001. Engineering Evaluation/Cost Analysis, Remedial Investigation/ Feasibility Study, Sauget Area 1, Revision 1, June 8, 2001.

## **EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C**

Sauget Area 1, Sauget and Cahokia, Illinois

### **ATTACHMENTS**

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- |              |   |
|--------------|---|
| Attachment 1 | Data Regarding NAPL Survey in September 1999          |
| Attachment 2 | Results of NAPL Survey in May 2004                    |
| Attachment 3 | Additional Field Notes from 1999-2000                 |
| Attachment 4 | Selected Boring Logs                                  |
| Attachment 5 | Figures from EE/CA and RI/FS Report for Sauget Area 1 |

## EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C

Sauget Area 1, Sauget and Cahokia, Illinois

### ATTACHMENT 1 – DATA REGARDING NAPL SURVEY IN SEPTEMBER 1999

Figure A-1: Estimated Extent of DNAPL from Table 4-0c  
(Source: *Work Plan for DNAPL Study, GSI, 2004*)

Table 4-0c: Summary of Field Notes and Observations During Groundwater Monitoring  
(Source: *EE/CA and RI/FS Report, Adrian Brown, 2001*)

Field Notes from NAPL Survey, September 28-30, 1999  
(Source: *pages 45-49 from Book 5, Volume 9 of Field Sampling Report, O'Brien & Gere, 2000*)



Table 4-0c. Summary of Field Notes and Observations during Groundwater Monitoring

| Well/<br>Piezometer | Depth to Water<br>(ft BGS) | Depth to top<br>of DNAPL (ft) | Depth to bot<br>of DNAPL (ft) | DNAPL<br>Thickness (ft) | Total<br>Depth (ft) | Comments  |
|---------------------|----------------------------|-------------------------------|-------------------------------|-------------------------|---------------------|---|
| EE-01               | 8.43                       | 9.46                          | 32.75                         | 23.29                   | 32.75               |   |
| EE-03               | 10.93                      | 12.02                         | 32.80                         | 20.78                   | 32.80               |   |
| EE-04               | 12.78                      | 13.87                         | 22.31                         | 8.44                    | 22.31               |   |
| EE-11               | NA                         | 10.27                         | NA                            | Full depth              | NA                  | Well completely full of "brown oily liquid," no water |
| EE-20               | 12.09                      | 13.01                         | 27.89                         | 14.88                   | 27.89               |   |
| EEG-101             | 11.63                      | 12.66                         | 21.85                         | 9.19                    | 21.85               |   |
| EEG-102             | 10.25                      | 11.32                         | 20.52                         | 9.20                    | 20.52               |   |
| EEG-104             | 10.36                      | 11.48                         | 24.21                         | 12.73                   | 24.21               |   |
| EEG-106             | 8.20                       | 9.25                          | 19.60                         | 10.35                   | 19.60               |   |
| EEG-107             | 28.46                      | 9.92                          | 28.46                         | 18.54                   | 28.46               |   |
| EEG-108             | 7.97                       | 9.04                          | 28.42                         | 19.38                   | 28.42               |   |
| EEG-109             | 10.09                      | 11.13                         | 23.00                         | 11.87                   | 23.00               |   |
| EEG-110             | 9.42                       | 10.51                         | 23.65                         | 13.14                   | 23.64               |   |
| EEG-112             | 9.11                       | 10.19                         | 21.23                         | 11.04                   | 21.23               |   |
| P1-A-S              | 19.55                      | 20.32                         | 22.20                         | 1.88                    | 22.20               |   |
| P1-A-M              | 20.54                      | 21.60                         | 24.89                         | 3.29                    |                     |   |
|                     |                            | 36.31                         | 37.71                         | 1.40                    |                     |   |
|                     |                            | 39.08                         | 40.42                         | 1.34                    | 40.42               |   |
| P1-A-D              | 20.88                      | 22.00                         | 25.33                         | 3.33                    |                     |   |
|                     |                            | 56.06                         | 57.37                         | 1.31                    |                     |   |
|                     |                            | 58.89                         | 60.08                         | 1.19                    | 60.08               |   |
| P1-B-S              | 14.35                      | 15.16                         | 17.13                         | 1.97                    | 17.13               |   |
| P1-B-M              | 15.03                      | 16.09                         | 19.44                         | 3.35                    |                     |   |
|                     |                            | 35.94                         | 39.74                         | 3.80                    | 39.74               |   |
| P1-B-D              | 14.96                      | 56.01                         | 56.57                         | 0.56                    | 56.86               |   |
| P1-C-S              | 16.91                      | 17.00                         | 17.17                         | 0.17                    | 17.17               |   |
| P1-C-M              | 15.88                      | 17.03                         | 20.32                         | 3.29                    |                     |   |
|                     |                            | 35.95                         | 39.91                         | 3.96                    | 39.91               |   |
| P1-C-D              | 15.79                      | 55.80                         | 56.50                         | 0.70                    |                     |   |
|                     |                            | 58.77                         | 59.58                         | 0.81                    | 59.58               |   |
| P2-A-S              | 10.94                      | NA                            | NA                            | NA                      | 18.18               |   |

Table 4-0c (continued)

| Well/<br>Piezometer | Depth to Water<br>(ft BGS) | Depth to top<br>of DNAPL (ft) | Depth to bot<br>of DNAPL (ft) | DNAPL<br>Thickness (ft) | Total<br>Depth (ft) | Comments |
|---------------------|----------------------------|-------------------------------|-------------------------------|-------------------------|---------------------|----------|
| P2-A-M              | 11.04                      | 11.98                         | 15.62                         | 3.64                    | 39.23               |          |
| P2-A-D              | 11.06                      | 33.10                         | 38.47                         | 3.37                    |                     |          |
|                     |                            | 53.22                         | 59.91                         | 6.69                    | 59.91               |          |
| P2-B-S              | 6.84                       | NA                            | NA                            | NA                      | 9.85                |          |
| P2-B-M              | 6.84                       | NA                            | NA                            | NA                      | 39.87               |          |
| P2-B-D              | 6.75                       | NA                            | NA                            | NA                      | 59.45               |          |
| P2-C-S              | 7.30                       | 8.09                          | 10.05                         | 1.96                    | 10.05               |          |
| P2-C-M              | 7.50                       | 8.48                          | 11.93                         | 3.45                    |                     |          |
|                     |                            | 34.79                         | 36.90                         | 2.11                    |                     |          |
|                     |                            | 38.12                         | 38.80                         | 0.48                    | 38.60               |          |
| P2-C-D              | 7.98                       | 55.91                         | 56.17                         | 0.26                    | 58.59               |          |
| P3-A-S              | 12.23                      | 13.08                         | 14.61                         | 1.55                    | 14.61               |          |
| P3-A-M              | 12.07                      | 35.89                         | 39.56                         | 3.67                    | 39.56               |          |
| P3-A-D              | 12.19                      | 55.79                         | 59.58                         | 3.79                    | 59.58               |          |
| P3-B-S              | 9.58                       | 10.42                         | 13.13                         | 2.71                    | 13.13               |          |
| P3-B-M              | 9.78                       | 35.86                         | 39.10                         | 3.24                    | 39.10               |          |
| P3-B-D              | 9.64                       | NA                            | NA                            |                         | 55.06               |          |

9/28/99 Existing GW Well & New Piezometric Water Levels

| Well / Piezometer # | Date / Time             | Depth To Water Below Grade       | Notes   |
|---------------------|-------------------------|----------------------------------|---|
| A-3-S               | 9/26/99 0930            | 11.92 - 5.08 = 6.84'             | PID-Oppm TD-14.93-5.08=9.85<br>DNAPL - 14.54 to 18.18                                     |
| 2-B-M               | 9/26/99 0932            | 9.55 - 2.71 = 6.84'              | PID-Oppm TD-42.58-2.71=39.87<br>DNAPL - 35.86 to 39.23                                    |
| 2-B-D               | 9/26/99 0934            | 12.12 - 5.37 = 6.75'             | PID-Oppm TD 64.82 - 5.37 = 59.45<br>P.D.-Oppm TD 20.16 - 1.98 = 18.18                     |
| 2-A-S               | 9/26/99 0955            | 12.92 - 1.98 = 10.94'            | DNA PL - 14.54 to 18.18<br>PID-Oppm TD 41.79 - 2.56 = 39.23                               |
| 2-A-M               | 9/26/99 0957            | 13.60 - 2.56 = 11.04'            | DNA PL - 35.86 to 39.23<br>P.D.-Oppm TD 62.57 - 2.76 = 59.81                              |
| 2-A-D               | 9/26/99 0959            | 13.82 - 2.76 = 11.06'            | DNA PL - 55.98 to 62.67 = "   |
| <del>EFG-104</del>  | <del>9/26/99 1030</del> | <del>11.18 - 0.82 = 10.36'</del> | <del>PID-Oppm TD 25.05 - 0.82 = 24.23</del><br><del>DNAPL - 11.48 to 24.21</del>          |
| 3-B-S               | 9/26/99 1050            | 11.71 - 2.13 = 9.58'             | PID-Oppm TD 16.24-2.13=14.11<br>DNAPL - 10.42 to 13.13                                    |
| 3-B-M               | 9/26/99 1055            | 12.33 - 2.55 = 9.78'             | PID-Oppm TD 41.65-2.55=39.10<br>DNAPL 35.86 to 39.10                                      |
| 3-B-D               | 9/26/99 1100            | 12.06 - 2.42 = 9.64'             | PID-Oppm TD 57.48-2.42=55.06  |
| -S                  | 9/26/99 1105            | 14.66 - 2.43 = 12.23'            | PID-Oppm TD 17.04-2.43=14.61<br>P.D.in Well - 160ppm<br>DNA PL - 13.06 - 14.61            |
| 3-A-M               | 9/26/99 1110            | 14.51 - 2.44 = 12.07'            | PID-Oppm TD 42.00-2.44=39.56<br>DNAPL - 35.89 to 39.56                                    |
| 3-A-D               | 9/26/99 1115            | 14.67 - 2.48 = 12.19'            | PID-Oppm TD 62.44-2.48=59.96<br>DNAPL - 55.79 to 59.58                                    |
| 2-C-S               | 9/26/99 1120            | 9.90 - 2.60 = 7.30'              | PID-Oppm TD 28.65-2.60=26.05<br>DNAPL - 8.04 to 10.05                                     |
| 2-C-M               | 9/26/99 1122            | 10.81 - 3.31 = 7.50'             | PID-Oppm TD 41.91-3.31=38.60<br>DNAPL - 8.48 to 11.93<br>34.79 to 36.90<br>38.12 to 38.60 |
| 2-C-D               | 9/26/99 1125            | 11.16 - 3.18 = 7.98'             | PID-Oppm TD 61.77-3.18=58.59<br>DNAPL 35.86 to 56.17                                      |
| EFG-108             | 9/26/99 1135            | 8.69 - 0.72 = 7.97'              | PID-Oppm TD 29.14-0.72=28.42<br>DNAPL 9.04 to 26.92                                       |
|                     |                         |                                  | RJRK<br>9/28/99   |

9/29/99 Existing GW Well & New Parameter Water Level

Well ID Date/Time Depth to Water BG Total Depth BG Notes

EE-04 9/29/99 1515 14.68 - 1.40 = 12.78 24.21 - 1.90 = 22.31 PID B2 - Open  
PID Well - Open

EE-20 9/29/99 1525 13.37 - 1.28 = 12.09 29.36 - 1.28 = 28.08 PID B2 - Open  
PID Well - Open

EE-03 9/29/99 1540 13.17 - 2.24 = 10.93 35.04 - 2.24 = 32.80 PID B2 - Open  
PID Well - Open

EE-01 9/29/99 1550 10.72 - 2.29 = 8.43 35.04 - 2.29 = 32.75 PID B2 - Open  
PID Well - Open

EE-01 9/29/99 1615 10.93 - 1.51 = 9.42 25.15 - 1.51 = 23.64 PID B2 - Open  
PID Well - Open

EE-109 9/29/99 1625 11.70 - 1.61 = 10.09 24.61 - 1.61 = 23.00 PID B2 - Open  
PID Well - Open

1645 Dropped used RPE off @ Judith Lane Facility

1650 Left Judith Lane Facility for Site R

1700 Arrived Back @ Site R began to complete A

Preparation for the end of Day

# Existing Well & New Piezometer Water Levels

47  
9/29/99  
9/30/99

PID 1045

|  |
|--|
| CALIBRATED ON: 9.29.99 (DATE)  |
| CALIBRATED BY: [Signature] (SIGN)  |
| STANDARDS USED: 150 ppm<br>150 kufy/lane   |
| STANDARDS TRACEABLE TO: _____  |
| ENVIRONMENTAL CONDITIONS ARE<br>SUITABLE FOR CALIBRATION <input checked="" type="checkbox"/> N |

9/30/99 Ex. by GW Well & New Piezometer Water Levels

|  |
|--|
| CALIBRATED ON: 9.30.99 (DATE)  |
| CALIBRATED BY: [Signature] (SIGN)  |
| STANDARDS USED: 100 ppm<br>150 kufy/lane   |
| STANDARDS TRACEABLE TO: _____  |
| ENVIRONMENTAL CONDITIONS ARE<br>SUITABLE FOR CALIBRATION <input checked="" type="checkbox"/> N |

JW Remy  
AS Cook

- 0905 Left Site R for Cemo to meet w/ Joe Broughton about water boring & well locations.
- 0930 Arrived @ Cemo, Met w/ Joe about water boring & well locations. Boring to be amended into well will be next to building south of Old Quarry. Location is marked after locations were not marked @ this time because marks would probably not last.
- 1000 Left Joe Broughton to check water levels in Piezometers & Ex. wells on Cemo Property

25/27

9/30/99 Existing Well &amp; New Proposed Water Levels

Well/P.

EE6-

EE6-

EE-

| Well/Piez ID | Date/Time                                    | Depth to Water BG    | TD BG                | Notes  |     |
|--------------|--|----------------------|----------------------|--|-----|
| P1-A-S       | 9/30/99 1010                                 | 22.64 - 3.09 = 19.55 | 29.29 - 3.09 = 26.20 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 20.32 to 22.20                                     | EE6 |
| P1-A-M       | 9/30/99 1015                                 | 20.44 + 0.1 = 20.54  | 40.32 + 0.1 = 40.42  | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 21.60 to 24.89<br>36.31 to 37.71<br>39.08 to 40.42 | EE  |
| P1-A-D       | 9/30/99 1020                                 | 21.02 - 0.14 = 20.88 | 60.22 - 0.14 = 60.08 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 22.00 to 25.33<br>56.06 to 57.37<br>58.89 to 60.08 |     |
| P1-B-S       | 9/30/99 1035                                 | 17.44 - 3.09 = 14.35 | 20.22 - 3.09 = 17.13 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 15.16 to 17.13                                     |     |
| P1-B-M       | 9/30/99 1040                                 | 18.05 - 3.02 = 15.03 | 42.76 - 3.02 = 39.74 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 16.09 to 19.44<br>35.94 to 39.74                   |     |
| P1-B-D       | 9/30/99 1045                                 | 18.01 - 1.05 = 16.96 | 59.86 - 1.05 = 58.81 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 56.01 to 56.57                                     |     |
| P1-C-S       | 9/30/99 1100                                 | 19.94 - 3.03 = 16.91 | 20.20 - 3.03 = 17.17 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 17.00 to 17.17                                     |     |
| P1-C-M       | 9/30/99 1105                                 | 18.31 - 2.43 = 15.88 | 42.44 - 2.43 = 39.91 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 17.03 to 20.32<br>35.95 to 39.91                   |     |
| P1-C-D       | 9/30/99 1110                                 | 18.34 - 2.55 = 15.79 | 62.13 - 2.55 = 59.58 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 55.80 to 56.57<br>58.77 to 59.58                   |     |
| EE-14        | Well is Damaged Could Not get Rite Down Well |                      |                      |  |     |
| EE6-112      | 9/30/99 1130                                 | 10.18 - 1.01 = 9.17  | 22.30 - 1.01 = 21.29 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 10.19 to 21.29                                     |     |
| EE6-106      | 9/30/99 1150                                 | 9.99 - 1.79 = 8.20   | 21.59 - 1.79 = 19.80 | PID B2 - Offm<br>PID Well - Offm<br>DNAPL - 9.25 to 19.80                                      |     |

# Existing Well & New Piezometer Water Levels

49

9/30/99

| Well/Piez ID | Date/Time                                 | Depth to Water BG   | TD BG                | Notes  |
|--------------|---|---|----------------------|--|
| EEG-102      | 9/30/99 1205                              | 11.15 - 0.90 = 10.25  | 21.42 - 0.90 = 20.52 | PID BZ - 0 ppm<br>PID Well - 0 ppm<br>DNAPL - 11.52 to 20.52 |
| EEG-107      | 9/30/99 1220                              | 12.76 - 3.89 = 8.87   | 32.35 - 3.89 = 28.46 | PID BZ - 0 ppm<br>PID Well - 50 ppm<br>DNAPL 9.92 to 28.46   |
| EE-11        | 9/30/99 1230                              | -1.74   | -1.74                | PID BZ - 0 ppm<br>PID Well - 45 ppm<br>DNAPL - 10.27' Down   |
|              | Well has Free Product in H <sub>2</sub> O |   |                      |  |
|              | Brown oily Liquid                         |   |                      |  |
| EEG-101      | 9/30/99 1250                              | 14.73 - 3.10 = 11.63  | 24.85 - 3.10 = 21.75 | PID BZ - 1 ppm<br>PID Well - 2 ppm<br>DNAPL - 12.66 to 21.75 |
| EE-05        | 9/30/99                                   | Well Casing Wedged Against Cap<br>Could not open well. Will need<br>heavy machinery to move Casing Back<br>to remove Cap. |                      |  |

## **EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C**

Sauget Area 1, Sauget and Cahokia, Illinois

### **ATTACHMENT 2 – RESULTS OF NAPL SURVEY IN MAY 2004**

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Table A-1: Results of May 2004 NAPL Survey

Figure A-2: Map Showing NAPL Survey Results, May 2004

**Table A-1**  
**Results of May 2004 NAPL Survey**  
 Sauget Area 1  
 Sauget and Cahokia, Illinois

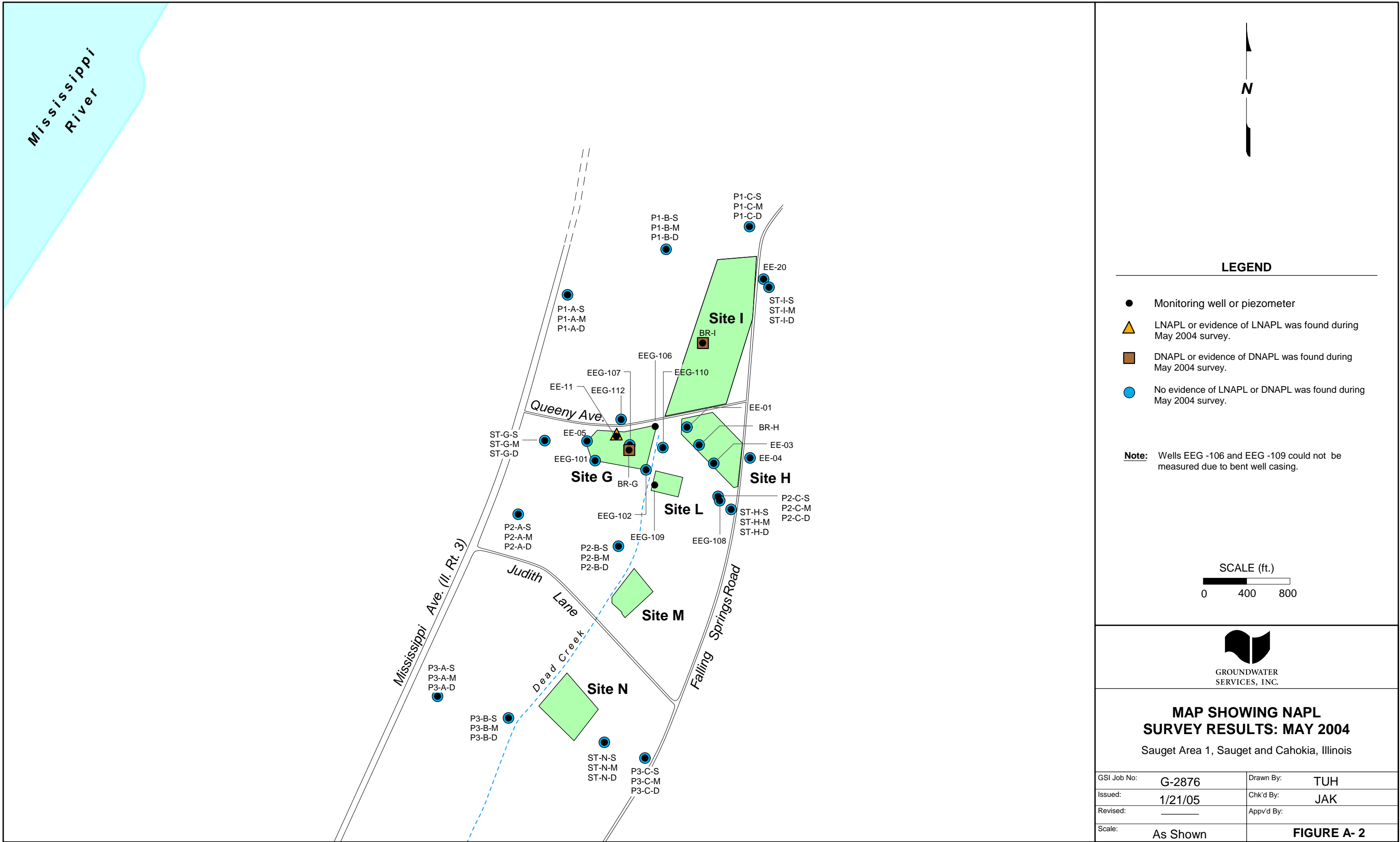
| Well I.D. | Measured<br>Depth to Water<br>(ft below toc) | Measured<br>Total Depth<br>(ft below toc) | Measurements or<br>Observations of Free Phase<br>LNAPL or DNAPL? |
|-----------|--|---|--|
| EE-01     | 13.23  | 34.96                                     | No   |
| EE-03     | 15.65  | 34.94                                     | No   |
| EE-04     | 17.04  | 19.94                                     | No   |
| EE-05     | 16.64  | 22.15                                     | No   |
| EE-11     | (see Note 2)                                 | 23.12                                     | Yes - LNAPL (see Note 2)   |
| EE-20     | 15.95  | 30.45                                     | No   |
| EEG-101   | 17.56  | 19.93                                     | No   |
| EEG-102   | 13.90  | 22.05                                     | No   |
| EEG-106   | **   | **  | **   |
| EEG-107   | 15.55  | 32.04                                     | No   |
| EEG-108   | 11.32  | 23.97                                     | No   |
| EEG-109   | **   | **  | **   |
| EEG-110   | 13.61  | 25.33                                     | No   |
| EEG-112   | 13.15  | 22.30                                     | No   |
| P1-A-S    | Dry  | 22.05                                     | No   |
| P1-A-M    | 23.65  | 40.21                                     | No   |
| P1-A-D    | 23.60  | 59.74                                     | No   |
| P1-B-S    | 20.24  | 21.19                                     | No   |
| P1-B-M    | 20.83  | 42.67                                     | No   |
| P1-B-D    | 20.72  | 62.71                                     | No   |
| P1-C-S    | Dry  | 19.51                                     | No   |
| P1-C-M    | 21.00  | 42.30                                     | No   |
| P1-C-D    | 21.06  | 62.11                                     | No   |
| P2-A-S    | 16.89  | 20.94                                     | No   |
| P2-A-M    | 16.60  | 41.49                                     | No   |
| P2-A-D    | 16.92  | 62.59                                     | No   |
| P2-B-S    | 12.47  | 12.68                                     | No   |
| P2-B-M    | 12.45  | 42.60                                     | No   |
| P2-B-D    | 12.60  | 62.44                                     | No   |
| P2-C-S    | 12.42  | 15.83                                     | No   |
| P2-C-M    | 13.49  | 41.53                                     | No   |
| P2-C-D    | 13.84  | 61.13                                     | No   |
| P3-A-S    | Dry  | 16.80                                     | No   |
| P3-A-M    | 17.20  | 42.05                                     | No   |
| P3-A-D    | 17.35  | 62.05                                     | No   |
| P3-B-S    | 15.04  | 16.10                                     | No   |
| P3-B-M    | 14.80  | 41.36                                     | No   |
| P3-B-D    | 15.20  | 57.10                                     | No   |
| P3-C-S    | 14.29  | 18.29                                     | No   |
| P3-C-M    | 16.12  | 41.58                                     | No   |
| P3-C-D    | 16.16  | 61.99                                     | No   |
| ST-G-S    | Dry  | 12.43                                     | No   |
| ST-G-M    | 12.33  | 44.53                                     | No   |
| ST-G-D    | 12.60  | 79.99                                     | No   |
| ST-H-S    | Dry  | 8.98                                      | No   |
| ST-H-M    | 8.40   | 42.73                                     | No   |
| ST-H-D    | 8.87   | 79.38                                     | No   |

**Table A-1**  
**Results of May 2004 NAPL Survey**  
 Sauget Area 1  
 Sauget and Cahokia, Illinois

| Well I.D. | Measured<br>Depth to Water<br>(ft below toc) | Measured<br>Total Depth<br>(ft below toc) | Measurements or<br>Observations of Free Phase<br>LNAPL or DNAPL? |
|-----------|--|---|--|
| ST-I-S    | 14.00  | 15.07                                     | No   |
| ST-I-M    | 13.78  | 45.15                                     | No   |
| ST-I-D    | 13.63  | 79.09                                     | No   |
| ST-N-S    | **   | **  | **   |
| ST-N-M    | 8.37   | 41.69                                     | No   |
| ST-N-D    | 8.19   | 78.68                                     | No   |
| BR-G      | 16.45  | 135.08                                    | Yes - DNAPL (see Note 3)   |
| BR-H      | 15.14  | 117.68                                    | No   |
| BR-I      | 17.52  | 151.11                                    | Yes - DNAPL (see Note 4)   |

**Notes:**

- 1) \*\* = Water level and or NAPL measurement could not be conducted due to bent well casing or subsurface obstruction.
- 2) Well EE-11 contained approximately 8 to 9 feet of LNAPL. Measured depth to top of LNAPL was 13.82 feet on May 17, 2004. A total of approximately one gallon of LNAPL was removed during a recovery test conducted on May 19, 2004.
- 3) There was no measurable thickness of DNAPL in BR-G. There was some evidence of the presence of a minor amount of DNAPL in BR-G, based on inspection of a cotton string and a clear bailer lowered to the bottom of the well. A DNAPL recovery test was attempted at this location. No free phase DNAPL or DNAPL droplets were noted in the produced fluids.
- 4) At BR-I, there was some evidence of the presence of a minor amount of DNAPL based on inspection of a cotton string and clear bailer lowered to the bottom of the well. The bailer contained approximately 1/8th inch of DNAPL when it was retrieved. A DNAPL recovery test was attempted at this location. No free phase DNAPL or DNAPL droplets were noted in the produced fluids.



## EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C

Sauget Area 1, Sauget and Cahokia, Illinois

### ATTACHMENT 3 – ADDITIONAL FIELD NOTES FROM 1999-2000

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Field Notes from Well Development, October 4-6, 1999

*(Source: pages 50-57 from Book 5, Volume 9 of Field Sampling Report, O'Brien & Gere, 2000)*

Field Notes from Groundwater Sampling, October 7-13, 1999

*(Source: pages 97A-1 to 97A-11, Volume 1 of Field Sampling Report, O'Brien & Gere, 2000)*

Field Notes from Static Water Level Surveys: December 1999, March 2000, June 2000

*(Source: pages 108-110, 157-159, and 164-166 from Book 5, Volume 3 of Field Sampling Report, O'Brien & Gere, 2000)*

50

10/1/99

Existing Well &amp; Piezometer Water Levels

WELL DEPTH

VS. MEASURED DEPTH

ACTUAL

CALC'D. CHG.

10/1/99

AM

CO

EE-05

DAMAGED T21 TO T23

EEG-101

21.85

23

1.15

0.5

EEG-102

20.52

21.5

1.98

0.5

EEG-104

24.21

24

+21

0.5

EEG-106

19.60

23

3.4

0.5

EEG-107

28.46

28

+46

0.5

EEG-112

21.23

26

4.8

0.5

H

EE-01

32.75

33

.25

0.5

EE-02

DAMAGED

23

0.5

EE-03

32.80

32

+80

0.5

EEG-110

23.64

23

+164

0.5

NO ACCESS YET

EE-04 BK 22.31-23

169

0.5

I

EE-12

COULD NOT FIND

33

0.5

EE-13

29

0.5

EE-14

DAMAGED

27.5

0.5

EE-15

LOCATION

29

0.5

NO ACCESS YET

EE-20 BK

28

0.5

L

EEG-103

DAMAGED

21.5

0.5

EEG-105

DAMAGED

21.5

0.5

EEG-109

23.00

22.55

+45

0.5

SOUTH OF CO

EEG-111

DAMAGED

28.46

0.5

PENT

EEG-108 BK 28.46

29

0.5

# Existing Monitoring Well Development

WELL REDEVELOPING JIMBUCCO / ASKAISER  
LOCK 5214 SITE C

AM REVIEWED LOCATION WITH ALAN AND SRT  
UP TRUCK

11:33 ARRIVED AT SITE COL AND

SRT UP TO REDEVELOP FEEL-106

FEEL-106

PID OPP

10/4/95

| WELL     | DATE/TIME     | IDTW (FG)  | IDBL       | Notes  |
|----------|---------------|------------|------------|--------|
| FEEL-106 | 10/4/95 11:30 | 10.64-1.90 | 21.65-1.90 | P.D.D. |

8.74/0 49.75/0

10.5 10.5 10.5 10.5

ORIGINAL PARASTATIC PUMP FAILED TO PUMP

& FINE SAND WAS PLOGED PUMP. WELLS FOR

WAS TRIED AND ALSO FAILED ORDERED

ISSUE FROM PINE ENVIRONMENTAL

FOR DELIVERY TO MERRILL

BAILED 7 GALLONS FROM FEEL-106

WELLS 2/10/95

10/4/95

|  |       |
|--|-------|
| CALIBRATED ON: 10/4/95   | DATE: |
| CALIBRATED BY: [Signature]                                     | SIGN: |
| STANDARDS USED: [Signature]                                    |       |
| STANDARDS TRACEABLE TO: NIST                                   |       |
| ENVIRONMENTAL CONDITIONS ARE<br>SUITABLE FOR CALIBRATION (Y) N |       |

2:00 WELLS PLOGED UP WITH FINE SAND PUMP WAS  
COMPLETELY SEALED WITH FINE SAND

PINE ENVIRONMENTAL

800-301-9463

52

Existing Well Development

10/05/95

ORCO 10/5/95

Jim Jordan / ASKASED

|                              |                          |
|------------------------------|--------------------------|
| QUALIFIED BY                 | 10/5/95                  |
| CALIBRATED BY                | ASB                      |
| S. VIDEOS USED               | 10/05/95                 |
| STANDARDS TRACEABLE TO       | NIST                     |
| ENVIRONMENTAL CONDITIONS ARE | SUITABLE FOR CALIBRATION |

A/R

SET UP AT WELL ~~10/5/95~~ EE-01  
 TO RE-DEVELOP THIS WELL WAS NOT  
 VERY OCCURED SO WAS SET UP WELL FROM  
 EEC-101 PD OPM

3/05/95  
 DE #101 15/05/95 2.41

DTW 11.340

TD 25.45

CAUTION: PUMP FAILED TO PUMP WATER  
 A DANN WILL GO TO OFFICE WITH PUMP  
 EX. ALLIES

- WHILE PUMP WASN'T WORKING GOT  
 PUMP BACKED IS CALLOUS FROM WELL  
 WATER CLEARED UP IT WAS ORGANIC  
 BLACK AND CLEARED TO 6 GALS (502)  
 WILL RESET ON ALARMS WELL WATER  
 WAS LAMP RIL WATERY FOR PUMP

SET UP AT EEC-104 7:10 PM

TOP OF PTO 1.410

DTW 12.05 - 1.41 10.59 DTW

GROVE WANT OFF FOR NO REASON

TD 25.45 - 1.41 = 23.99

A/R  
 PUMP 18 GALS  
 PUMP 18 GALS FROM WELL  
 WATER WAS CLEAR

Existing Well Development

53

12/05/89

At 10 M WBS PUMPO: FORCE WATER INTO  
TANK.

TO: FEW-102 IN CORNER OF SITE 6  
TOP OF TRO 1.05.51

DTW - 11.37  
TO 71.72

REMOVED 10 GALLONS WITH A LOT  
OF SEDIMENT. WATER CLEARED UP  
AND WBS FILLED TRODOMINE.

\* NEED WELL CAP FOR FEW-102

- 2.08 WBS SET ON ATOT FEW-101

TOC TO GS 3.23

DTW 14.97

ID 24.96

ADDED 10 GALLONS OF WATER FOR  
WELL WITH SEDIMENT

- 3.00 SET ON AT FEW-107

TOC TO GS 3.73

DTW 13.92

ID 27.73

\* NEED WELL CAP

WELL ASING HAS PHOSPHORUS

LEFT PIC TODAY TO WELL

POT IT NEAR TRO

- REMOVED 15 GALLONS OF WATER/SEDIMENT

54

10/05/99 Testing Well Development

SET UP AT RECO-110 AFTER 1/25  
WITH SUB FORMAL ~~ASS~~ ACCESS OK  
RECO-110 710 00 PM

DTG 11.12  
25.12  
1.30

15000005

SET UP TO REDEVELOPE NOT MOD  
SILT. P.D.E. WENT DOWN WELL  
EASILY. AND WATER WAS MOSTLY CLEAR

4.45

SET UP AT RECO 109

RECO-109 ~~PD~~ 8.00 PM

DTG 11.07

TD 24.06

TO 4.25

~~COULD NOT GET OUT RIDGE~~  
~~ON TOMORROW~~

~~11.12 25.12 1.30~~

~~11.12 25.12 1.30~~

~~11.12 25.12 1.30~~

~~11.12 25.12 1.30~~

~~11.12 25.12 1.30~~

~~11.12 25.12 1.30~~

# Existing Well Development

55

10/6/99

9:30 SET UP AGAIN AT FEEL-109 TO  
ATTMPT PUMP - USED PVC TUBS  
FROM SWG GIFT TO PUMP TODAY  
TUBS TO BOTTOM OF WELL. FROM  
PUMPING WATER (SED FROM BOTTOM OF  
WELL) REMOVED 15 GALLONS  
BOTH WELL RAILED PUMP AND  
WATER CLEARED SO WELL  
LET TRUCK AND PUMP  
REMOVED AFTER TODAY

11:00

FEEL-112 SET UP ON WELL AFTER  
CORTA REMOVAL FROM JOE BARRON  
CERRO CORRO (418)-337-6000

TOCTOGS 1,2

CON 10.53

TD 26.95

~~REMARKS~~  
WATER CLEAR NO SED IN WELL  
REMOVED 5 GALLONS

11:30 REVISITED FEEL-100 WATER WAS  
CLEAR ~~AND~~ REMOVED 5 GALLONS

AJK

|  |
|--|
| CALIBRATED ON: _____ (DATE)                                |
| CALIBRATED BY: _____ (SIGN)                                |
| STANDARDS USED: _____                                      |
| STANDARDS AVAILABLE TO: _____                              |
| ENVIRONMENTAL CONDITIONS ARE<br>SUITABLE FOR OPERATION Y N |

Frieding Well Development

UNCLINQUE / AS 4/1/92

10/11/97

DRT UP AT EE-05 WARD TO  
 DESAT WELL CASHY IN STORE TO  
 CASHY TO CORT WARD ORAL  
 RIDE CASHY TO THE SIDE  
 AND PLACED CABLE AS A  
 SPACER AREA WAS TENSILE & CABLE  
 DOWN WARD

~~SEE~~ @ EE-05 TO D.O.  
 TOC TO GS. 1.93

DTCW: 13.95

TD 22.07

REMOVED ABOUT 10 WELLS & ~~FOR~~  
 THE WELLS CO TO THE BOTTOM OF  
 THE WELL WELLS TO CORR. RICK

12:30

BACK TO EEC-109 TIED TO  
 CORT PUMP TROUGH LOTS OF  
 SICK WARD ORAL (90)

TOOK 15 MORE COLLARS OUT  
 OF WELL CURED UP

1:30 BACK TO EE-05

REMOVED 10 COLLARS TIED / SLD FROM  
 THE WELL AND TO CORR  
 WARD CNO LOOK ON PRO ASKED

2:05 TO EE-03

TOC TO GS 2.04

DTCW: 14.44

TD 32.44

WELLS TO CORR

WATER 10

HAD RIGGS WARD TO USE THE PVC PIPE

10/98

JW Goodar/AS 4A1352

EE-108 OAP WOULDNT COME OFF

PO 0.0 NAD CORE STOP

- DTW 9.01

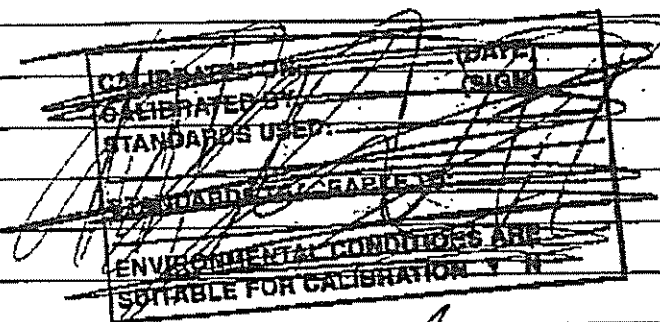
- TO 29.34

- DO TO GO 0.98

RED CORE IN OPENING USED TWO PIPE

POURED 10 GALLONS FROM WELLS

TO CLEAN WATER (LITTLE SEDIMENT)



AJR

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date: 10/7/99  
 Name: COLONY SITE W  
 Site Location: SUNSET, IL  
 Personnel: AM-JUDICE/JS+H

Weather: CLOUDY 55°  
 Well Number: EEG-10W  
 Project Number: 2348  
 Evacuation Method: VACUUMATIC PUMP  
PID 0.0 PPM

Depth of Well: 21.35 ft. - 190 = 19.45  
 Depth to Water: 10.38 ft. - 190 = 8.48  
 Length of Water Column: 10.97 ft.  
 Volume of Water in Well: 1.39 gal.(s)  
 3X Volume of Water in Well: 5.36 gal.(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling  
 Did well go dry?

Yes 5.36 gal.(s)  
 No ✓

(Other, Specify)

\*Measurements taken from

☒ Top of Well Casing☐ Top of Protective Casing

Water parameters:

Temperature Reading  
10.6  
 initial 57.1  
 after 1.79 (gal.) 57.1  
 after 2.38 (gal.) 59.4  
 after 5.36 (gal.) 64.1  
 after (gal.)  
 after (gal.)

pH Reading  
 4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard 10.67  
 initial 6.57  
 after 1.79 (gal.) 6.57  
 after 2.38 (gal.) 6.57  
 after 5.36 (gal.) 6.71  
 after (gal.)  
 after (gal.)

Conductivity Reading  
 84 S Standard  
 1413 S Standard  
 initial 2240  
 after 1.79 (gal.) 2240  
 after 2.38 (gal.) 2300  
 after 5.36 (gal.) 2380  
 after (gal.)  
 after (gal.)

Water Sample:  
 Collected:

13:24

Physical Appearance at Start

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU's) 35  
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU's) 2.05  
 Sheen/Free Product NONE

Sample Parameters:

VOCS (8260B) SVOCs (8270C) METALS (6010B/7470A) CYM/NIDE (9010B)  
 PCBs (600) TEST/4EBS (8081A/8151A) DIOXIN (18290) NA

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 40 ML          | WTFE 40        | 3           | N        | NCL          | 6.71 | 64.1  | 2380         |
| 1 L AMBER      | "              | 2           | N        | "            | "    | "     | "            |
| 500 750 ML     | Poly           | 1           | N        | UNO3         | "    | "     | "            |
| 500 750 ML     | Poly           | 1           | N        | NAOH         | "    | "     | "            |
| 1 L            | AMBER CANS     | 4           | N        | "            | "    | "     | "            |
| 1 L            | AMBER          | 2           | N        | "            | "    | "     | "            |
| 1 L            | AMBER          | 2           | N        | "            | "    | "     | "            |
| 250 ml         | Poly           | 1           | N        | UNO3         | "    | "     | "            |

Monitoring Well Integrity Checklist:

Well identification number clearly marked?.....Yes ✓ No ✓  
 Well covers and locks in good condition and secure?.....Yes ✓ No ✓  
 Is the well stand pipe vertically aligned and secure?.....Yes ✓ No ✓  
 Is the concrete pad and surface seal in good condition?.....Yes ✓ No ✓  
 Are soils surrounding the well pad eroded?.....Yes ✓ No ✓  
 Is the PVC well casing in good condition?.....Yes ✓ No ✓  
 Is there standing water in the annular space between the well stand pipe and P/C casing?.....Yes ✓ No ✓  
 Is the stand pipe vented at the base to provide drainage?.....Yes ✓ No ✓  
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes ✓ No ✓

NOTES:

Top of casing elevation:  
 Depth to Ground Water: 8.84 (190)  
 Ground Water Elevation:

97A-1

Date: 10/7/89  
 Name: SOLITA INC  
 Site Location: SAUSEE Area / 1524502  
 Personnel: SM JUDAL

Weather: SUNNY 70°F  
 Well Number: EEG-102  
 Project Number: 7334B  
 Evaluation Method: PER STATIC PUMP

710 0.0 PPM

Depth of Well \* 28.50 ft. - 1.05 = 27.45  
 Depth to Water \* 11.40 ft. - 1.05 = 10.41  
 Length of Water Column 11.04 ft.  
 Volume of Water in Well 1.80 gal(s)  
 3X Volume of Water in Well 5.40 gal(s)

Water Volume / ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling 5.40 gal(s)  
 Did well go dry? Yes      No     

(Other, Specify)

\*Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

Water parameters:

Temperature Reading

pH Reading

Conductivity Reading

4.0 Standard

7.0 Standard

10.0 Standard

Initial

after 1.80 (gal.)

after 3.60 (gal.)

after 5.40 (gal.)

after      (gal.)

after      (gal.)

after      (gal.)

84 S Standard

1413 S Standard

Initial

after 1.80 (gal.)

after 3.60 (gal.)

after 5.40 (gal.)

after      (gal.)

after      (gal.)

Water Sample:

Time Collected: 10:10 AM

Physical Appearance at Start

Physical Appearance at Sampling

Color

Odor

Turbidity (> 100 NTUs)

Sheen/Free Product

Color

Odor

Turbidity (> 100 NTUs)

Sheen/Free Product

Sample Parameters:

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 40 ML          | WATER OLF      | 3           | N        | NAL          | 7.04 | 77.3  | 7100         |
| 1 L            | " RUBBER       | 2           | N        | "            | "    | "     | "            |
| 500            | " POLY         | 1           | N        | HNO3         | "    | "     | "            |
| 500            | " POLY         | 1           | N        | NaOH         | "    | "     | "            |
| 1 L            | " RUBBER       | 2           | N        | "            | "    | "     | "            |
| 1 L            | " "            | 4           | N        | "            | "    | "     | "            |
| 1 L            | " "            | 2           | N        | "            | "    | "     | "            |
| 750 ML         | Poly           | 1           | N        | HNO3         | "    | "     | "            |

Monitoring Well Integrity Checklist:

Well identification number clearly marked?.....Yes      No       
 Well covers and locks in good condition and secure?.....Yes      No       
 Is the well stand pipe vertically aligned and secure?.....Yes      No       
 Is the concrete pad and surface seal in good condition?.....Yes      No       
 Are soils surrounding the well pad eroded?.....Yes      No       
 Is the PVC well casing in good condition?.....Yes      No       
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes      No       
 Is the stand pipe vented at the base to provide drainage?.....Yes      No       
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes      No     

NOTES:

Top of casing elevation:       
 Depth to Ground Water:       
 Ground Water Elevation:

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

date: 10/7/99  
 Site Name: 3012 TIA  
 Site Location: 811110  
 Personnel: Jim Stoddard & J. G. G. G.

Weather: SUNNY 800  
 Well Number: EEC-107  
 Project Number: 23948  
 Evaluation Method: LABORATORY ANALYSIS

PID 0.0 PPM

Depth of Well: 32.10 ft  $-3.73 = 28.37$   
 Depth to Water: 13.01 ft  $-3.73 = 9.28$   
 Length of Water Column: 19.01 ft  
 Volume of Water in Well: 3.11 gal(s)  
 3X Volume of Water in Well: 9.3 gal(s)

Water Volume / ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.459 X LWC

Volume removed before sampling: 9.3 gal(s)  
 Did well go dry? Yes     No ✓

\*Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

(Other, Specify)

Water parameters:

Temperature Reading

pH Reading

Conductivity Reading

4.0 Standard      
 7.0 Standard      
 10.0 Standard      
 initial 10.40  
 after 3.11 (gal.) 6.15  
 after 6.77 (gal.) 10.10  
 after 9.33 (gal.) 6.13  
 after     (gal.)      
 after     (gal.)    

84 S Standard      
 1413 S Standard      
 initial 28,300  
 after 3.11 (gal.) 3,140  
 after 6.77 (gal.) 9,000  
 after 9.33 (gal.) 26,000  
 after     (gal.)      
 after     (gal.)    

Water Sample:  
 Time Collected: 6:00 PM

Physical Appearance at Start

Color: BROWN/BLACK  
 Odor: PEST ODOOR  
 Turbidity (> 100 NTU's): 219 PPM  
 Sheen/Free Product: 200 PPM SHEEN

Physical Appearance at Sampling

Color: YELLOW  
 Odor: PEST ODOOR  
 Turbidity (> 100 NTU's): 340 PPM  
 Sheen/Free Product: WAXY

Sample Parameters:

VOCs (82700) SVOCs (82700) METALS (60108/74704) CYANIDE (91018)  
PEST-680, PEST/NEBS (8081A/8151A) DIOXIN (8290)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 100 mL         | GLASS          | 3           | N        | HCL          | 6.13 | 67.5  | 2680         |
| 1 L            | AMBER          | 2           | N        | ---          | ---  | ---   | ---          |
| 500 mL         | POLY           | 1           | N        | HALO3        | ---  | ---   | ---          |
| 500 mL         | POLY           | 1           | N        | NaOH         | ---  | ---   | ---          |
| 1 L            | AMBER          | 2           | N        | ---          | ---  | ---   | ---          |
| 1 L            | AMBER          | 2           | N        | ---          | ---  | ---   | ---          |
| 1 L            | AMBER          | 2           | N        | ---          | ---  | ---   | ---          |
| 250 mL         | Poly           | 1           | N        | ---          | ---  | ---   | ---          |

Monitoring Well Integrity Checklist

Well identification number clearly marked?.....Yes ✓ No      
 Well covers and locks in good condition and secure?.....Yes ✓ No      
 Is the well stand pipe vertically aligned and secure?.....Yes ✓ No      
 Is the concrete pad and surface seal in good condition?.....No NOISE Yes     No      
 Are soils surrounding the well pad eroded?.....Yes     No ✓  
 Is the PVC well casing in good condition?.....Yes ✓ No      
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes     No ✓  
 Is the stand pipe vented at the base to provide drainage?.....Yes     No      
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes     No    

NOTES: Top of casing elevation:      
 Depth to Ground Water:      
 Ground Water Elevation:    

BUCKETS OF PORE WATER ① 4.7  
② 4.9

97A-3

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date: 10/8/95  
 Site Name: SOL - 4 SITE LT  
 Site Location: SWABR IL  
 Personnel: JM JOHNSON DARRELLS. JOHNSON

Weather: DRY 60°F  
 Well Number: EEG-101  
 Project Number: 23548  
 Evacuation Method: PERISTALTIC PUMP

PID 0.0 APM

Depth of Well: 25.06 ft. - 3.23 = 21.83  
 Depth to Water: 13.06 ft. - 3.23 = 11.85  
 Length of Water Column: 9.46 ft.  
 Volume of Water in Well: 1.12 gal.(s)  
 3X Volume of Water in Well: 4.58 gal.(s)

Water Volume /ft. for:

3" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

9:30-

Volume removed before sampling: 5.0 gal.(s)  
 Did well go dry? Yes        No ✓

Yes        No ✓

\*Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

(Other, Specify)

Water parameters:

Temperature Reading

pH Reading

Conductivity Reading

4.0 Standard ✓  
 7.0 Standard ✓  
 10.0 Standard ✓

84 S Standard ✓  
 1413 S Standard ✓

initial 7.56  
 after 1.62 (gal.) 7.40  
 after 3.24 (gal.) 7.60  
 after        (gal.)         
 after        (gal.)         
 after        (gal.)       

initial 8170  
 after 1.62 (gal.) 6780  
 after 3.24 (gal.) 7130  
 after        (gal.) 7350  
 after        (gal.)         
 after        (gal.)       

Water Sample:  
 Time Collected: 10:30

Physical Appearance at Start

Color: LI BROWN  
 Odor: NO  
 Turbidity (> 100 NTU's): 0.4  
 Sheen/Free Product: NO

Physical Appearance at Sampling

Color: CLEAR  
 Odor: NO  
 Turbidity (> 100 NTU's): 3.24  
 Sheen/Free Product: NO

Sample Parameters:

VOCs (8260B) SVOCs (8270C) METALS (60103/7470A) CU AMIDE (90103)  
 PCBs 680, TEST (HGBs 8081A/8151A) DIOXIN (290)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH  | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|-----|-------|--------------|
| 40 ML          | GLASS          | 3           | N        | HCL          | 7.2 | 14.5  | 7280         |
| 1 L            | AMBER          | 2           | N        |              |     |       |              |
| 500 ML         | POLY           | 1           | N        | HNO3         |     |       |              |
| 500 ML         | POLY           | 1           | N        | HNO4         |     |       |              |
| 1 L            | AMBER          | 2           | N        |              |     |       |              |
| 1 L            | AMBER          | 4           | N        |              |     |       |              |
| 1 L            | AMBER          | 2           | N        |              |     |       |              |
| 250 ML         | Poly           | 1           | N        | HNO3         |     |       |              |

Monitoring Well Integrity Checklist:

Well identification number clearly marked?.....Yes ✓ No ✓  
 Well covers and locks in good condition and secure?.....Yes ✓ No         
 Is the well stand pipe vertically aligned and secure?.....Yes ✓ No         
 Is the concrete pad and surface seal in good condition?.....NO Yes        No ✓  
 Are soils surrounding the well pad eroded?.....Yes ✓ No ✓  
 Is the PVC well casing in good condition?.....GOOD Yes ✓ No ✓  
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes ✓ No ✓  
 Is the stand pipe vented at the base to provide drainage?.....Yes ✓ No ✓  
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes ✓ No       

NOTES: Top of casing elevation:         
 Depth to Ground Water:         
 Ground Water Elevation:

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date: 10/8/99  
 Site Name: SALUDA  
 Site Location: SAUGER FL  
 Personnel: JM ADDLER

Weather: Cloudy 70°F  
 Well Number: EEG-104  
 Project Number: 23548  
 Evacuation Method: PERISTALTIC PUMP

PID 0.0 PPM

Depth of Well \* 25.40 ft. - 1.46 = 23.94  
 Depth to Water \* 11.52 ft. - 1.46 = 10.06  
 Length of Water Column 13.88 ft.  
 Volume of Water in Well 226 gal.(s)  
 3X Volume of Water in Well 678 gal.(s)

Water Volume/ft. for:

☒ 3" Diameter Well = 0.163 X LWC  
☐ 4" Diameter Well = 0.653 X LWC  
☐ 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 6.8 gal.(s)  
 Did well go dry? Yes ☐ No ☒

Yes ☐ No ☒

\*Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

(Other, Specify)

Water parameters:

## Temperature Reading

## pH Reading

## Conductivity Reading

TOEB  
 28.40  
 10.30  
 after 2.26 (gal.)  
 after 4.52 (gal.)  
 after (gal.)  
 after (gal.)  
 after (gal.)

initial 69.4  
 20.2  
 71.0  
 0.5

4.0 Standard ☒  
 7.0 Standard ☒  
 10.0 Standard ☒  
 initial 7.07  
 after 2.26 (gal.) 7.95  
 after 4.52 (gal.) 8.31  
 after (gal.) 8.25  
 after (gal.)  
 after (gal.)

84 S Standard  
 1413 S Standard  
 initial 8910  
 after 2.26 (gal.) 8870  
 after 4.52 (gal.) 9040  
 after 6.60 (gal.) 8700  
 after (gal.)  
 after (gal.)

Water Sample:  
 Time Collected: 15:45

## Physical Appearance at Start

Color 544  
 Odor NONE  
 Turbidity (> 100 NTUs) 10570  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color Clear  
 Odor Slight  
 Turbidity (> 100 NTUs) 4.12  
 Sheen/Free Product NONE

Sample Parameters:

VOCs (8260B) SVOCs (8270C) METALS (80101-80104) CYANIDE (9010)  
 PCBs (800) PEST (8081A/8081B) DIOXIN (8290)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 40 ML          | GLASS          | 3           | N        | NAL          | 8.26 | 70.5  | 8700         |
| 1L             | AMBER          | 2           | N        | IT           |      |       |              |
| 250 & 500 ML   | POLY           | 1           | N        | HALO2        |      |       |              |
| 500 ML         | POLY           | 1           | N        | HALO2        |      |       |              |
| 1L             | AMBER          | 2           | N        |              |      |       |              |
| 1L             | AMBER          | 4           | N        |              |      |       |              |
| 1L             | AMBER          | 2           | N        |              |      |       |              |

## Monitoring Well Integrity Checklist

Well identification number clearly marked? Yes ☒ No ☒  
 Well covers and locks in good condition and secure? Yes ☒ No ☐  
 Is the well stand pipe vertically aligned and secure? Yes ☒ No ☐  
 Is the concrete pad and surface seal in good condition? Yes ☒ No ☐  
 Are soils surrounding the well pad eroded? Yes ☒ No ☐  
 Is the PVC well casing in good condition? Yes ☒ No ☐  
 Is there standing water in the annular space between the well stand pipe and PVC casing? Yes ☒ No ☐  
 Is the stand pipe vented at the base to provide drainage? Yes ☒ No ☐  
 Does the total depth of the well sounded correspond with original well completion depths? Yes ☒ No ☐

NOTES: Top of casing elevation: \_\_\_\_\_  
 Depth to Ground Water: \_\_\_\_\_  
 Ground Water Elevation: \_\_\_\_\_

97A-5

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date:

10/8/99

Site Name:

SOLITA 'C'

Site Location:

SOUTHERN T.I.

Personnel:

J.M. SUDDEKE

Weather:

CLOUDY 60°F

Well Number:

TELEPHONE E0112

Project Number:

23548

Evacuation Method:

PNEUMATIC

PID 0.0 PPM

Depth of Well \*

2250 ft. - 1.21 = 22.29

Depth to Water \*

10.34 ft. - 1.21 = 9.33

Length of Water Column

11.70 ft.

Volume of Water in Well

1.91 gal.(s)

3X Volume of Water in Well

5.73 gal.(s)

Water Volume /ft. for:

3" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling

5.75

gal.(s)

Did well go dry?

Yes

No

\*Measurements taken from

☒ Top of Well Casing☐ Top of Protective Casing

(Other, Specify)

Water parameters:

## Temperature Reading

TEMPERATURE

1.05 initial 69.2

6.41 after 1.91 (gal.) 68.1

4.08 after 3.82 (gal.) 68.8

after (gal.)

after (gal.)

after (gal.)

after (gal.)

## pH Reading

4.0 Standard ☒

7.0 Standard ☒

10.0 Standard ☒

initial 8.02

after 1.91 (gal.) 8.01

after 3.82 (gal.) 8.04

after (gal.)

after (gal.)

after (gal.)

after (gal.)

## Conductivity Reading

84 S Standard

1413 S Standard

initial 9080

after 1.91 (gal.) 9120

after 3.82 (gal.) 9100

after (gal.)

after (gal.)

after (gal.)

after (gal.)

Water Sample:

Time Collected:

12:30

## Physical Appearance at Start

Color

CLEAR

Odor

NONE

Turbidity (&gt; 100 NTU's)

11.05

Sheen/Free Product

NONE

## Physical Appearance at Sampling

Color

CLEAR

Odor

NONE

Turbidity (&gt; 100 NTU's)

4.20

Sheen/Free Product

NONE

Sample Parameters:

VOC (82408) SLOC (92706) METALS (8008/7470A) CYANIDE (91015)

PCBs (680) PEST/HERBS (808A/8151A) DIOXIN (8290)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 40 ML          | QVBS           | 3           | N        | NOL          | 1.95 | 68.3  | 9100         |
| 1L             | DMB2           | 2           | N        |              |      |       |              |
| 250g 500 ML    | POLI           | 1           | N        | HVO3         |      |       |              |
| 500 ML         | TOLE           | 1           | N        | NAC4         |      |       |              |
| 1L             | DMB2           | 2           | N        |              |      |       |              |
| 1L             | DMB2           | 2           | N        |              |      |       |              |
| 1L             | DMB2           | 2           | N        |              |      |       |              |

## Monitoring Well Integrity Checklist

Well identification number clearly marked?.....Yes ☒ No ☐

Well covers and locks in good condition and secure?.....Yes ☒ No ☐

Is the well stand pipe vertically aligned and secure?.....Yes ☒ No ☐

Is the concrete pad and surface seal in good condition?.....NONE Yes ☐ No ☐

Are soils surrounding the well pad eroded?.....Yes ☒ No ☐

Is the PVC casing in good condition?.....STEEL Yes ☒ No ☐

Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes ☒ No ☐

Is the stand pipe vented at the base to provide drainage?.....Yes ☒ No ☐

Does the total depth of the well sounded correspond with original well completion depths?.....Yes ☒ No ☐

NOTES:

Top of casing elevation:

Depth to Ground Water:

Ground Water Elevation:

10.34

97A-6

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date: 10/14/99  
 Site Name: SOLAR  
 Site Location: SALISBURY  
 Personnel: AMZUDER, A. HASSER

Weather: SUNNY 70° F  
 Well Number: SE-210  
 Project Number: 23548  
 Evacuation Method: HYDRAULIC PUMP  
PID 0.0

Depth of Well: 25.9 ft. - 130 = 24.2  
 Depth to Water: 11.4 ft. - 130 = 10.14  
 Length of Water Column: 14.12 ft.  
 Volume of Water in Well: 2.30 gal(s)  
 3X Volume of Water in Well: 6.90 gal(s)

Water Volume / ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling: 7.06 gal(s)  
 Did well go dry? Yes ☐ No ☒

\*Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

(Other, Specify)

Water parameters:

## Temperature Reading

TOFF 35.10  
 initial 70  
 after 2.30 (gal.) 69.5  
 after 5.22 (gal.) 69.9  
 after (gal.)      
 after (gal.)      
 after (gal.)    

## pH Reading

4.0 Standard ☒  
 7.0 Standard ☒  
 10.0 Standard ☐  
 initial 6.39  
 after 2.30 (gal.) 6.80  
 after 5.22 (gal.) 7.49  
 after (gal.)      
 after (gal.)      
 after (gal.)    

## Conductivity Reading

84 S Standard ☐  
 1413 S Standard ☒  
 initial 7030  
 after 2.30 (gal.) 7120  
 after 5.22 (gal.) 7220  
 after (gal.)      
 after (gal.)      
 after (gal.)    

Water Sample:  
 Time Collected:

11:30 & 13:30 (MSMD)

## Physical Appearance at Start

Color: CLEAR  
 Odor: NONE  
 Turbidity (> 100 NTU's): 35.10  
 Sheen/Free Product: None

## Physical Appearance at Sampling

Color: CLEAR  
 Odor: NONE  
 Turbidity (> 100 NTU's): 0.20  
 Sheen/Free Product: None

Sample Parameters:

VOCs (82603) SVOCs (82700) METALS (60102/74204) CYANIDE (90105)  
PCBs (680), PEST/WAXES (80814/8151A) DIOXIN (8240)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|------|-------|--------------|
| 40 mL          | GLASS          | 3           | N        | HCL          | 7.02 | 68.1  | 7093         |
| 1 L            | GLASS          | 2           | N        | —            | "    | "     | "            |
| 2504 500mL     | POLY           | 1           | N        | HALO3        | "    | "     | "            |
| 500 mL         | POLY           | 1           | N        | HALO4        | "    | "     | "            |
| 1 L            | MURR           | 2           | N        | —            | "    | "     | "            |
| 1 L            | "              | 4           | N        | —            | "    | "     | "            |
| 1 L            | "              | 2           | N        | HALO3        | "    | "     | "            |

Monitoring Well Integrity Checklist:

Also collected MS/MD samples at this location

Well identification number clearly marked? Yes ☒ No ☒  
 Well covers and locks in good condition and secure? Yes ☒ No ☐  
 Is the well stand pipe vertically aligned and secure? Yes ☒ No ☐  
 Is the concrete pad and surface seal in good condition? None Yes ☒ No ☒  
 Are soils surrounding the well pad eroded? Yes ☒ No ☒  
 Is the PVC well casing in good condition? STEEL Yes ☒ No ☒  
 Is there standing water in the annular space between the well stand pipe and PVC casing? Yes ☒ No ☒  
 Is the stand pipe vented at the base to provide drainage? Yes ☒ No ☒  
 Does the total depth of the well sounded correspond with original well completion depths? Yes ☒ No ☒

NOTES:

Top of casing elevation:             
 Depth to Ground Water:             
 Ground Water Elevation:

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

to: 10/11/99  
 Site Name: SAUSET  
 Site Location: ON 21000E AS 10000  
 Personnel: 10000

Weather: SUNNY 70°  
 Well Number: CEG-109  
 Project Number: 23948  
 Evacuation Method: EXHAUSTIVE PUMP  
710 0.0 PPM

Depth of Well \* 25.05 ft. - 1.25 = 23.80  
 Depth to Water \* 21.10 ft. - 1.25 = 19.85  
 Length of Water Column 12.95 ft.  
 Volume of Water in Well 2.11 gal.(s)  
 3X Volume of Water in Well 6.33 gal.(s)

Water Volume /ft. for:

② Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.489 X LWC

Volume removed before sampling 6.5 gal.(s)  
 Did well go dry? Yes    No   

\*Measurements taken from

☒ Top of Well Casing☐ Top of Protective Casing

(Other, Specify)

Water parameters:

## Temperature Reading

## pH Reading

## Conductivity Reading

100B  
10000  
4.31 after 2.11 (gal.) initial 76.2  
1.42 after 4.22 (gal.) 70.9  
 after 6.33 (gal.) 69.3  
 after    (gal.)     
 after    (gal.)   

4.0 Standard     
 7.0 Standard     
 10.0 Standard     
 initial 4.74  
 after 2.11 (gal.) 4.50  
 after 4.22 (gal.) 4.74  
 after    (gal.)     
 after    (gal.)     
 after    (gal.)   

84 S Standard     
 1413 S Standard     
 initial 2330  
 after 2.11 (gal.) 2340  
 after 4.22 (gal.) 2310  
 after    (gal.)     
 after    (gal.)     
 after    (gal.)   

Water Sample:  
 Time Collected: 15:00

## Physical Appearance at Start

## Physical Appearance at Sampling

Color GRAY  
 Odor NOISE  
 Turbidity (> 100 NTU's) 100.0  
 Sheen/Free Product NOISE

Color GRAY  
 Odor NOISE  
 Turbidity (> 100 NTU's) 1.22  
 Sheen/Free Product NOISE

Sample Parameters:

VOC's (8260B) SVOC's (8270C) METALS (600B/7470A) CYANIDE (7010B)  
PCBs 680, PESTS/HERBS (8081A/9151A) DIOXIN (8290)

| Container Size     | Container Type | # Collected | Filtered | Preservative   | pH          | Temp.       | Conductivity |
|--------------------|----------------|-------------|----------|----------------|-------------|-------------|--------------|
| <u>40 ML</u>       | <u>GLASS</u>   | <u>3</u>    | <u>N</u> | <u>HCL</u>     | <u>4.60</u> | <u>69.1</u> | <u>2470</u>  |
| <u>1 L</u>         | <u>AMBER</u>   | <u>2</u>    | <u>N</u> | <u>  </u>      | <u>  </u>   | <u>  </u>   | <u>  </u>    |
| <u>250, 500 ML</u> | <u>GLASS</u>   | <u>4</u>    | <u>N</u> | <u>HNO3</u>    | <u>  </u>   | <u>  </u>   | <u>  </u>    |
| <u>500 ML</u>      | <u>  </u>      | <u>1</u>    | <u>N</u> | <u>NaOH</u>    | <u>  </u>   | <u>  </u>   | <u>  </u>    |
| <u>1 L</u>         | <u>AMBER</u>   | <u>2</u>    | <u>N</u> | <u>  </u>      | <u>  </u>   | <u>  </u>   | <u>  </u>    |
| <u>1 L</u>         | <u>  </u>      | <u>4</u>    | <u>N</u> | <u>  </u>      | <u>  </u>   | <u>  </u>   | <u>  </u>    |
| <u>1 L</u>         | <u>  </u>      | <u>2</u>    | <u>N</u> | <u>Na2S2O3</u> | <u>  </u>   | <u>  </u>   | <u>  </u>    |

## Monitoring Well Integrity Checklist

Well identification number clearly marked?.....Yes    No     
 Well covers and locks in good condition and secure?.....Yes    No     
 Is the well stand pipe vertically aligned and secure?.....Yes    No     
 Is the concrete pad and surface seal in good condition?.....NOISE Yes    No     
 Are soils surrounding the well pad eroded?.....Yes    No     
 Is the PVC well casing in good condition?.....STEEL Yes    No     
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes    No     
 Is the stand pipe vented at the base to provide drainage?.....Yes    No     
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes    No   

NOTES: Top of casing elevation:     
 Depth to Ground Water:     
 Ground Water Elevation:

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date:

10/12/99

Site Name:

Solex 17

Site Location:

EF-0301

Personnel:

ASX/1157

Weather:

cloudy - 55°F

Well Number:

EF-0301

Project Number:

23549

Evacuation Method:

per 125014 p. 40

PID = 0.0 ppm

Depth of Well \*

35.05 ft.

Depth to Water \*

11.15 ft.

Length of Water Column

23.9 ft.

Volume of Water in Well

390 gal.(s)

3X Volume of Water in Well

1174 gal.(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling

11.7

gal.(s)

Did well go dry?

Yes

No

(Other, Specify)

\*Measurements taken from

X Top of Well Casing

Top of Protective Casing

Water parameters:

## Temperature Reading

## pH Reading

## Conductivity Reading

4.0 Standard

7.0 Standard

10.0 Standard

initial

after 3.9 (gal.)

after 3.6 (gal.)

after 11.7 (gal.)

after (gal.)

after (gal.)

84 S Standard

1413 S Standard

initial

after 3.9 (gal.)

after 3.6 (gal.)

after 11.7 (gal.)

after (gal.)

after (gal.)

Water Sample:

Time Collected:

9 AM

## Physical Appearance at Start

Color

Dark grey

Odor

Yes

Turbidity (&gt; 100 NTUs)

2.0 x 100

Sheen/Free Product

NO

## Physical Appearance at Sampling

Color

clear - black sediment

Odor

Yes

Turbidity (&gt; 100 NTUs)

11.7 x 100

Sheen/Free Product

NO

Sample Parameters:

VOC (4260B), SVOC (8220C), Metals (6010B), Cyanide (9000B)  
 PCBs (660), Pesticides (8081A), Herbicides (8151A), Pesticides (8290), Metals (8290)

| Container Size | Container Type | # Collected | Filtered | Preservative | pH  | Temp. | Conductivity |
|----------------|----------------|-------------|----------|--------------|-----|-------|--------------|
| 40 ml          | Glass          | 3           | ✓        | HCl          | 6.4 | 59.4  | 1940         |
| 1L             | Plastic        | 2           | ✓        | —            | —   | —     | —            |
| 500 ml         | Plastic        | 1           | ✓        | HNO3         | —   | —     | —            |
| 500 ml         | "              | 1           | ✓        | HNO3         | —   | —     | —            |
| 250 ml         | "              | 1           | ✓        | HNO3         | —   | —     | —            |
| 1L             | Plastic        | 2           | ✓        | —            | —   | —     | —            |
| 1L             | "              | 4           | ✓        | —            | —   | —     | —            |
| 1L             | "              | 2           | ✓        | H2SO4        | —   | —     | —            |

## Monitoring Well Integrity Checklist

Split Sample w/ Weston

Well identification number clearly marked?.....Yes  
 Well covers and locks in good condition and secure?.....Yes  
 Is the well stand pipe vertically aligned and secure?.....Yes X  
 Is the concrete pad and surface seal in good condition?.....Yes  
 Are soils surrounding the well pad eroded?.....Yes  
 Is the PVC casing in good condition?.....Yes  
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes  
 Is the stand pipe vented at the base to provide drainage?.....Yes  
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes

No  
 No  
 No  
 No  
 No  
 No  
 No  
 No  
 No

NOTES:

Top of casing elevation:

Depth to Ground Water:

Ground Water Elevation:

97A-9

Date: 10/12/99Site Name: SolutiaSite Location: EE-003Personnel: ASU/ASTWeather: Sunny 90°Well Number: EE003Project Number: 77548Evacuation Method: per 15 minPID - 0.00ppmDepth of Well: 35.20 ft.Depth to Water: 17.51 ft.Length of Water Column: 21.69 ft.Volume of Water in Well: 3.58 gal.(s)3X Volume of Water in Well: 10.61 gal.(s)

Water Volume /ft. for:

3" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling: 14.5 gal.(s)Did well go dry? Yes    No X

(Other, Specify)

Measurements taken from

☒ Top of Well Casing☐ Top of Protective Casing

Water parameters:

## Temperature Reading

## pH Reading

## Conductivity Reading

4.0 Standard

7.0 Standard

10.0 Standard

initial

after 3.5 (gal.)after 7.05 (gal.)after 10.61 (gal.)after 14.5 (gal.)after    (gal.)

84 S Standard

1413 S Standard

initial

after 3.5 (gal.)after 7.05 (gal.)after 10.61 (gal.)after 14.5 (gal.)after    (gal.)Water Sample: 22.64100Time Collected: 4:15 PM

## Physical Appearance at Start

## Physical Appearance at Sampling

Color: light brnOdor: NOTurbidity (> 100 NTU's): 145 X1000Sheen/Free Product: NOColor: clear - brn particlesOdor: NOTurbidity (> 100 NTU's): 22.6 X100Sheen/Free Product: NO

Sample Parameters:

VOC (82608), SVOC (82700), Metals (60100), Cyanide (50105)  
PCB's (650), Pesticides (8081A), Herbicides (8151A), Dioxins (82902) Merc. (7410A)

| Container Size | Container Type | # Collected | Filtered | Preservative     | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|------------------|------|-------|--------------|
| 40 ml          | Glass          | 3           | N        | HCl              | 6.25 | 69.9  | 1100         |
| 1L             | Amber Glass    | 2           | N        | —                |      |       |              |
| 500 ml         | poly.          | 1           | N        | HCl              |      |       |              |
| 500 ml         | "              | 1           | N        | HNO <sub>3</sub> |      |       |              |
| 250 ml         | "              | 1           | N        | HNO <sub>3</sub> |      |       |              |
| 1L             | Amber Glass    | 2           | N        | —                |      |       |              |
| 1L             | "              | 4           | N        | —                |      |       |              |
| 1L             | "              | 2           | N        | —                |      |       |              |

## Monitoring Well Integrity Checklist:

Well identification number clearly marked?.....Yes    No X

Well covers and locks in good condition and secure?.....Yes X No   

Is the well stand pipe vertically aligned and secure?.....Yes X No   

Is the concrete pad and surface seal in good condition?.....Yes    No   

Are soils surrounding the well pad eroded?.....Yes    No X

Is the PVC well casing in good condition?.....Yes X No   

Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes    No X

Is the stand pipe vented at the base to provide drainage?.....Yes    No X

Does the total depth of the well sounded correspond with original well completion depths?.....Yes X No   

NOTES:

Top of casing elevation:   Depth to Ground Water:   Ground Water Elevation:

## O'BRIEN &amp; GERE ENGINEERS, INC.

## Ground Water Sampling Log

Date: 10/13/99  
 Site Name: Southern Summit Area 1  
 Site Location: Southern Summit  
 Personnel: DA THOMPSON / ALCORC

Weather: Clear windy  
 Well Number: EE-05  
 Project Number: 22546  
 Evacuation Method: Remittable Pump  
pid 00ppm

Depth of Well \* 22.21 ft.  
 Depth to Water \* 14.71 ft.  
 Length of Water Column 8.00 ft.  
 Volume of Water in Well 1.304 gal.(s)  
 3X Volume of Water in Well 3.91 gal.(s)

Water Volume /ft. for:

6" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 7 gal.(s)  
 Did well go dry? Yes        No X

\*Measurements taken from

☒ Top of Well Casing☐ Top of Protective Casing

(Other, Specify)

Water parameters:

## Temperature Reading

initial 65.2  
 after 2 (gal.) 65.5  
 after 4 (gal.) 63.6  
 after 6 (gal.) 63.2  
 after        (gal.)         
 after        (gal.)       

## pH Reading

4.0 Standard         
 7.0 Standard         
 10.0 Standard         
 initial 6.88  
 after 2 (gal.) 6.90  
 after 4 (gal.) 6.90  
 after 6 (gal.) 6.90  
 after        (gal.)         
 after        (gal.)       

## Conductivity Reading

84 S Standard         
 1413 S Standard         
 initial 1600  
 after 2 (gal.) 1620  
 after 4 (gal.) 1570  
 after 6 (gal.) 1560  
 after        (gal.)         
 after        (gal.)       

Water Sample:

Time Collected: 1300

## Physical Appearance at Start

Color Clear  
 Odor Chlorine  
 Turbidity (> 100 NTU's) 62  
 Sheen/Free Product Trace Sheen

## Physical Appearance at Sampling

Color Clear  
 Odor Chlorine  
 Turbidity (> 100 NTU's) 4.5  
 Sheen/Free Product Trace Sheen

Sample Parameters:

VOCs (82608), SVOCs (82700), METALS (60103/7070A), (VANIOE (40103)  
 PCBs (660), PESTS/HERBS (8061A/8151A), DIOXIN (9290)

| Container Size | Container Type | # Collected | Filtered | Preservative     | pH   | Temp. | Conductivity |
|----------------|----------------|-------------|----------|------------------|------|-------|--------------|
| 1L             | Amber          | 2           | NO       | (O2)             | 6.96 | 63.2  | 1560         |
| 1L             |                | 2           |          |                  |      |       |              |
| 1L             |                | 2           |          |                  |      |       |              |
| 1L             |                | 2           |          |                  |      |       |              |
| 500 ml         | Plastic        | 1           | No       | Cool, No $> O_2$ |      |       |              |
| 500 ml         |                | 1           |          | Cool, No $> O_2$ |      |       |              |
| 250 ml         |                | 1           |          | Cool, No $> O_2$ |      |       |              |
| 40 ml          | Black          | 2           | No       | Cool HCl         |      |       |              |

Monitoring Well Integrity Checklist

MS/MSD collected.

Well identification number clearly marked?.....Yes        No X  
 Well covers and locks in good condition and secure?.....Locked Casing Broken.....Yes        No X  
 Is the well stand pipe vertically aligned and secure?.....Yes X No         
 Is the concrete pad and surface seal in good condition?.....Yes X No         
 Are soils surrounding the well pad eroded?.....Yes        No X  
 Is the PVC well casing in good condition?.....Steel.....Yes X No         
 Is there standing water in the annular space between the well stand pipe and PVC casing?.....Yes        No X  
 Is the stand pipe vented at the base to provide drainage?.....Yes        No X  
 Does the total depth of the well sounded correspond with original well completion depths?.....Yes        No       

NOTES:

Top of casing elevation:         
 Depth to Ground Water:         
 Ground Water Elevation:

Existing Well: *Piezometer Water Level*  
 12-28-99 *Underdeveloped Area Soil Transients*

| Well/Piez ID | DATE/Time        | DEPTH TO WATER          | TO    | NOTES     |      |
|--------------|------------------|-------------------------|-------|-----------|------|
| P3-C-S       | 12/28/99 1711    | 15.35                   | 15.47 | PID = 2.5 | P3-B |
| P3-C-M       | 12/28/99 1       | 16.23                   | 16.99 | PID = 0.0 | P3-C |
| P3-C-D       | 12/28/99 1       | 16.25                   | 16.28 | PID = 0.1 | P1-F |
| P1-C-D       | 12-28-99<br>1240 | 21.38 - 2.73<br>= 17.62 |       | PID = 1.7 | P1-B |
| P2-C-D       | 12-28-99<br>1240 | 13.86                   | 6.85  | PID = 0.0 | P1-A |
| P2-C-S       | 12-28-99<br>1245 | 13.49                   | 42.02 | PID = 0.0 | P2-A |
| P2-C-A       | 12-28-99<br>1249 | 11.43                   | 15.92 | PID = 0.0 | P3-C |
| P2-B-A       | 12-28-99<br>1207 | 12.37                   | 42.58 | PID = 0.0 | P3-A |
| P3-B-S       | 12-28-99<br>1316 | 15.12                   | 15.98 | PID = 0.0 | P1-C |
| P1-A-S       | 12/28/99<br>1322 | 21.81                   | 21.91 | PID = 0.0 | P1-C |

# Existing Well & Piezometer Water Levels

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| Well / Piezometer | Date / Time      | Depth to Water (ft) | TD BL | Notes                |
|-------------------|------------------|---------------------|-------|----------------------|
| -S                | 12-25-99<br>1053 | 12.42               | 12.65 | PID = NORMAL<br>4995 |
| -A-S              | 12-28-99<br>1054 | 16.42               | 20.84 | PID = NORMAL<br>4995 |
| -A-S              | 12-28-99<br>1300 | 16.78               | 16.97 | PID = NORMAL<br>4996 |
| -B-S              | 12-25-99<br>1055 | 20.03               | 20.13 | PID = NORMAL<br>4995 |
| -B-D              | 12-28-99<br>1057 | 12.53               | 62.52 | PID = NORMAL<br>4995 |
| -A-D              | 12-28-99<br>1057 | 17.00               | 62.72 | PID = NORMAL<br>4995 |
| -A-D              | 12-28-99<br>1307 | 17.56               | 62.23 | PID = NORMAL<br>4995 |
| -B-D              | 12-28-99<br>1320 | 15.19               | 57.42 | PID = NORMAL<br>4995 |
| -B-D              | 12-28-99<br>1004 | 20.88               | 62.78 | PID = NORMAL<br>4995 |
| -A-D              | 12/28/99<br>1557 | 24.01               | 59.95 | PID - 2.5<br>4995    |
| -B-M              | 12-28-99<br>1270 | 20.96               | 92.67 | PID = NORMAL<br>4995 |
| -A-M              | 12/28/99<br>1552 | 24.15               | 40.15 | PID - 11.5<br>4995   |
| -A-M              | 12-28-99<br>1030 | 16.72               | 41.58 | PID = NORMAL<br>4995 |
| -B-M              | 12-28-99<br>1310 | 14.86               | 41.55 | PID = NORMAL<br>4995 |
| -A-M              | 12-28-99<br>1310 | 17.37               | 41.98 | PID = NORMAL<br>4995 |
| -S                | 12-28-99<br>2934 | 17.5 - 6.6 = 10.9   |       | PID = 1<br>4995      |
| -CM               | 12-28-99<br>0544 | 21.25               | 42.4  |                      |

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Existing Well &amp; piezometer Water Levels

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| WELL / PIZ | DATE / TIME      | DEPTH TO WATER B50C | TO BG | NOTES  | 09 |
|------------|------------------|---------------------|-------|--|----|
| EE-05      | 12-27-99<br>1435 | 16.74               | 22.01 | PID - Normal<br>4985   |    |
| EEG-101    | 12-28-99<br>1445 | 17.82               | 24.96 | PID - Normal<br>4985   |    |
| EEG-102    | 12-28-99<br>1457 | 13.37               | 21.84 | PID - Normal<br>4985   | 0  |
| EEG-104    | 12-28-99<br>1350 | 14.24               | 24.95 | PID - Normal<br>4985   | 5  |
| EEG-106    | 12-28-99<br>1518 | 12.78               | 21.29 | PID - 0.0<br>4985  | 0  |
| EEG-107    | 12-28-99<br>1450 | 15.49               | 31.72 | PID - Normal<br>4985   | 5  |
| EEG-112    | 12/28/99<br>1613 | 13.31               | 26.75 | PID - 0.0<br>4985  | 09 |
| EE-01      | 12/28/99<br>1734 | 13.54               | 35.14 | PID - 0.0<br>4985  |    |
| EE-03      | 12/28/99<br>1726 | 15.96               | 34.95 | PID - 0.0<br>4985  |    |
| EE-04      |                  |                     |       | NO ACCESS<br>PER R. P. P. P.<br>NE SOLUTION<br>PID - 0.0<br>4985 |    |
| EEG-110    | 12/28/99<br>1635 | 13.84               | 25.24 | PID - 0.0<br>4985  |    |
| EE-20      | 12-28-99<br>1417 | 16.20               | 30.31 | PID - Normal<br>4985   |    |
| EEG-109    | 12/28/99<br>1641 | 14.49 Bent          | 24.95 | PID - 0.0<br>4985  |    |
| EEG-108    | 12-28-99<br>1251 | 11.30               | 28.97 | PID - 0.0<br>4985  |    |
| EE-11      | 12/28/99<br>1623 | 14.31 Bent          | 38.69 | PID - 0.0<br>4985  |    |
| EE-11      | 12/28/99<br>1527 | 17.38               | 22.96 | PID - 0.0<br>4985  |    |

# Existing Wells & Piezometer Water Level measurement

157

03-02-00

## Water level measurements

| WID | Date/Time | Depth to Water | g/d/ft |
|-----|-----------|----------------|--------|
|-----|-----------|----------------|--------|

|          |             |       |       |
|----------|-------------|-------|-------|
| E P3-C-S | 3/2/00/1517 | 17.25 | 0.0/N |
|----------|-------------|-------|-------|

|        |  |       |  |
|--------|--|-------|--|
| P3-C-M |  | 17.38 |  |
|--------|--|-------|--|

|        |  |       |  |
|--------|--|-------|--|
| P3-C-D |  | 17.42 |  |
|--------|--|-------|--|

|        |             |       |       |
|--------|-------------|-------|-------|
| P3-B-S | 3/2/00/1535 | 15.91 | 0.0/N |
|--------|-------------|-------|-------|

|        |  |             |  |
|--------|--|-------------|--|
| P3-B-M |  | 15.31/16.64 |  |
|--------|--|-------------|--|

|        |  |       |  |
|--------|--|-------|--|
| P3-B-D |  | 16.64 |  |
|--------|--|-------|--|

|          |             |     |       |
|----------|-------------|-----|-------|
| W P3-A-S | 3/2/00 1545 | Dry | 0.0 N |
|----------|-------------|-----|-------|

|        |  |       |       |
|--------|--|-------|-------|
| P3-A-M |  | 18.99 | 0.0/N |
|--------|--|-------|-------|

|        |  |       |       |
|--------|--|-------|-------|
| P3-A-D |  | 19.16 | 0.0/N |
|--------|--|-------|-------|

|        |            |       |       |
|--------|------------|-------|-------|
| P2-A-S | 3-200/1603 | 18.72 | 0.0/N |
|--------|------------|-------|-------|

|        |  |       |  |
|--------|--|-------|--|
| P2-A-M |  | 18.48 |  |
|--------|--|-------|--|

|        |  |       |  |
|--------|--|-------|--|
| P2-A-D |  | 18.80 |  |
|--------|--|-------|--|

|         |             |       |       |
|---------|-------------|-------|-------|
| EEG-104 | 3/2-00/1612 | 15.82 | 0.0/N |
|---------|-------------|-------|-------|

|        |             |     |       |
|--------|-------------|-----|-------|
| P2-B-S | 3/2/00/1620 | Dry | 0.0/N |
|--------|-------------|-----|-------|

|        |  |       |  |
|--------|--|-------|--|
| P2-B-M |  | 13.92 |  |
|--------|--|-------|--|

|        |  |       |  |
|--------|--|-------|--|
| P2-B-D |  | 14.09 |  |
|--------|--|-------|--|

158

## Existing Wells + Piezometer Water Level Measurements

Cres

03 Mar 00

GW elev. monitoring - WEL + DE-H.

~38°F light sleet / rain

P @ wellhead

Met. Cons.

| ID     | Time | Depth to water (from top of casing) | PID / 4-G    |   |
|--------|------|-------------------------------------|--------------|---|
| PZ-C-S | 1000 | 12.68                               | 0.7 / Normal | L |
| PZ-C-M |      | 14.96                               | 0.7 / Norm   |   |
| PZ-C-D |      | 15.31                               | 0.7 / Norm   |   |

G/H

|         |      |       |            |  |
|---------|------|-------|------------|--|
| EEG-108 | 1000 | 12.78 | 0.7 / Norm |  |
|---------|------|-------|------------|--|

Sagehen Field

|       |      |       |            |   |
|-------|------|-------|------------|---|
| EE-20 | 1020 | 17.85 | 0.6 / Norm | G |
|-------|------|-------|------------|---|

EE-04 Rogers Cartage - no access

G

H

|       |      |       |            |   |
|-------|------|-------|------------|---|
| EE-03 | 1030 | 17.33 | 7.9 / Norm | G |
|-------|------|-------|------------|---|

H

|       |      |       |             |   |
|-------|------|-------|-------------|---|
| EE-01 | 1037 | 15.06 | 48.4 / Norm | G |
|-------|------|-------|-------------|---|

Cano

|        |      |       |            |  |
|--------|------|-------|------------|--|
| PI-A-S | 1050 | 21.83 | 1.7 / Norm |  |
|--------|------|-------|------------|--|

|        |  |       |             |  |
|--------|--|-------|-------------|--|
| PI-A-M |  | 25.93 | 18.6 / Norm |  |
|--------|--|-------|-------------|--|

|       |  |       |            |  |
|-------|--|-------|------------|--|
| PIA-D |  | 25.85 | 2.6 / Norm |  |
|-------|--|-------|------------|--|

Cano

|        |      |     |            |   |
|--------|------|-----|------------|---|
| PI-B-S | 1115 | dry | 0.0 / Norm | G |
|--------|------|-----|------------|---|

|        |  |       |            |  |
|--------|--|-------|------------|--|
| PI-B-M |  | 22.74 | 0.0 / Norm |  |
|--------|--|-------|------------|--|

|        |  |       |            |  |
|--------|--|-------|------------|--|
| PI-B-D |  | 22.67 | 0.8 / Norm |  |
|--------|--|-------|------------|--|

Cano

|        |      |       |            |  |
|--------|------|-------|------------|--|
| PI-C-S | 1130 | 19.52 | 0.3 / Norm |  |
|--------|------|-------|------------|--|

|        |  |       |            |  |
|--------|--|-------|------------|--|
| PI-C-M |  | 22.89 | 0.2 / Norm |  |
|--------|--|-------|------------|--|

|        |  |       |            |  |
|--------|--|-------|------------|--|
| PI-C-D |  | 22.92 | 0.3 / Norm |  |
|--------|--|-------|------------|--|

Cano

|       |      |   |            |  |
|-------|------|---|------------|--|
| EE-14 | 1140 | * | 0.5 / Norm |  |
|-------|------|---|------------|--|

\* - probe would not fit into well due to well damage/bending

Cano

|         |      |       |            |  |
|---------|------|-------|------------|--|
| EEG-112 | 1145 | 14.87 | 0.7 / Norm |  |
|---------|------|-------|------------|--|

# Existing Well & Piezometer Water level measurement

159

| ID      | TIME | Depth to water (from top of casing) | Wellhead     |
|---------|------|-------------------------------------|--------------|
| EEG-110 | 1310 | 15.24                               | 0.8 / normal |

inert to  
loss.

|         |      |       |            |
|---------|------|-------|------------|
| EEG-109 | 1315 | 15.91 | 1.3 / norm |
|---------|------|-------|------------|

Well & casing are bent

|       |      |       |            |
|-------|------|-------|------------|
| EE-05 | 1340 | 18.43 | 0.6 / norm |
|-------|------|-------|------------|

well & casing are slightly bent

|         |      |       |            |
|---------|------|-------|------------|
| EEG-101 | 1345 | 19.35 | 1.3 / norm |
|---------|------|-------|------------|

|         |      |       |            |
|---------|------|-------|------------|
| EEG-102 | 1353 | 15.41 | 1.3 / norm |
|---------|------|-------|------------|

|         |      |       |            |
|---------|------|-------|------------|
| EEG-106 | 1358 | 14.36 | 1.1 / norm |
|---------|------|-------|------------|

|       |      |                         |             |
|-------|------|-------------------------|-------------|
| EE-11 | 1403 | 15.58 (continuous tone) | 32.6 / norm |
|-------|------|-------------------------|-------------|

15.60 beep

probe & tape have brown liquid on it as it is w/drawn from the well - appearance is similar to thin molasses; odor is noticed as probe/tape cleared off

|         |      |       |            |
|---------|------|-------|------------|
| EEG-107 | 1420 | 17.16 | 123 / norm |
|---------|------|-------|------------|

breathing zone readings were 0.0 for PID + normal for 4-6 during GW elev. monitoring

JEF 03 Mar 00

1. W164 Fixing Wells & piezometer water level measurement 165785  
26

6-28-00 SAUGET AREA 1 QUARTER WATER LEVEL MEASUREMENT

0730 Tim T. gave safety meeting with CMW and K. PERRY.

CMW On-site at first cluster of wells.

|      | PIE Z-METER / WELL | TYPE  | (FROM TOP OF Casing)<br>DEPTH TO WATER<br>AND WATER / G. L. | PID | NOTES                     |
|------|--------------------|-------|---|-----|---------------------------|
| 0810 | P3-A-S             | STICK | <del>18.0</del> 16.2  | 0.0 | Pipe hit mud before water |
|      | P3-A-M             |       | 14.0  | 0.0 |                           |
|      | P3-A-D             | ↓     | 18.1  | 0.0 |                           |
|      | P3-B-S             | STICK | 15.7  | 0.0 |                           |
|      | P3-B-M             |       | 15.4  | 0.0 |                           |
|      | P3-B-D             | ↓     | 15.75   | 0.0 |                           |
|      | P3-C-S             | STICK | 15.3  | 0.0 |                           |
|      | P3-C-M             |       | 16.5  | 0.0 | CAP WAS LINGERING         |
|      | P3-C-D             | ↓     | 16.65   | 0.0 |                           |
|      | ST-N-S             | FLUSH | 9.1   | 0.0 | hook broke off            |
|      | ST-N-M             |       | 9.5   | 0.0 | hook did not function     |
|      | ST-N-D             | ↓     | <del>8.5</del> 8.5 TOP OF Casing                            | 0.0 |                           |
|      | P2-B-S             | STICK | DRY BOTTOM @ 12.7   | 0.0 |                           |
|      | P2-B-M             |       | 12.8  | 0.0 |                           |
|      | P2-B-D             | ↓     | 13.0  | 0.0 |                           |
|      | EEG-104            | STICK | 14.5  | 0.0 |                           |
|      | EE-05              | STICK | 17.0  | 0.0 |                           |
|      | P2-A-S             | STICK | 17.4  | 0.0 | cap lodged inside         |
|      | P2-A-M             |       | 17.0  | 0.0 |                           |
|      | P2-A-D             |       |   |     |                           |
| 1210 | CMW goes to lunch  |       |   |     |                           |

# Existing Well and Piezometer water level measurement 100%

350 CM W Returns from Dug

| Piezometer/Well          | Type  | (FROM TOP OF CASING)<br>DEPTH TO WATER | PID | NOTES   |
|--------------------------|-------|--|-----|---|
| ST-1-S                   | FLUSH | 14.75                                  | 0.0 | No Locks  |
| ST-1-M                   | ↓     | 14.5                                   | 0.0 |   |
| ST-1-D                   | ↓     | 14.35                                  | 0.0 | ↓   |
| EE-20                    | STICK | 16.9                                   | 0.0 |   |
| ST-H-S                   |       | 9.35                                   | 0.0 | No Locks  |
| ST-H-M                   |       | 8.45                                   | 0.0 |   |
| ST-H-D                   |       | 9.35                                   | 0.0 | ↓   |
| P2-C-S                   | STICK | 07.45                                  | 0.0 |   |
| P2-C-M                   | ↓     | 13.7                                   | 0.0 |   |
| P2-C-D                   | ↓     | 14.25                                  | 0.0 |   |
| EEG-108                  | STICK | 11.15                                  | 0.7 |   |
| 555 ON<br>27-00<br>EE-03 | STICK | <del>16.1</del>                        | 0.0 | <del>Full not operating</del><br>Full not operating |
| BR-H                     | STICK | 15.6                                   | 0.0 |   |
| EE-01                    | STICK | 13.85                                  | 0.7 | 7.1 per in pipe                                     |
| EEG-110                  |       | 14.1                                   | 0.0 |   |
| EEG-109                  |       | 14.75                                  | 0.0 |   |
| EEG-106                  |       | 13.0                                   | 0.0 |   |
| EEG-102                  |       | 17.0                                   | 0.0 |   |
| BR-G                     |       | 17.0                                   | 0.0 | 7.1 per in pipe                                     |
| EEG-107                  | V     | 15.0                                   | 0.7 | 10.23 in pipe                                       |

## Existing Well and piezometer water level measurement

Existing Well

| Piezometer/Well                          | Type         | Depth to Top of Casing<br>Depth to Water | P.T.O. | Notes                               | Piezometer |
|--|--------------|--|--------|-------------------------------------|------------|
| EEG-107                                  | STICK        | 18.0                                     | 0.7    |                                     | P3-A       |
| EE-11                                    | ✓            | 18.0                                     | 0.7    | 15.3 in pipe                        |            |
| EE-05                                    | SEE PAGE 164 | ///                                      | ///    | ///                                 | P3-B-1     |
| ST-G-S                                   | FLUSH        | 12.8                                     | 0.7    |                                     |            |
| ST-G-B                                   | ↓            | 13.0                                     | 0.7    |                                     |            |
| ST-G-D                                   | ↓            | 13.0 MODERATE MUD                        | 0.7    | mud, gravel @ 4 ft                  |            |
| 30 CMU Returned to site R Col. 9 Village |              |  |        | 6-26-00                             | P3-C-S     |
| PI-A-S                                   | FLUSH        | 19.9                                     | 0.7    | CMU at 6-2                          |            |
| PI-A-M                                   | ↓            | 23.85                                    | 0.7    | 5.5 in pipe                         |            |
| PI-A-D                                   | ↓            | 23.85                                    | 0.7    |                                     | P4-B-M     |
| PI-B-S                                   | STICK        | 20.1                                     | 0.7    | 3.7 in pipe                         |            |
| PI-B-M                                   | ↓            | 21.25                                    | 0.7    | 23 in pipe                          |            |
| PI-B-D                                   | ↓            | 21.2                                     | 0.0    |                                     | P4-A-M     |
| PI-C-S                                   | STICK        | DRY @ 19.6                               | 0.0    | NO CAP<br>mud - no H <sub>2</sub> O |            |
| PI-C-M                                   | ↓            | 21.05                                    | 0.0    | NO CAP                              |            |
| PI-C-D                                   | ↓            | 21.75                                    | 0.0    |                                     |            |
| BR-1                                     | STICK        | 37.9                                     | 2.3    | GENERATOR PUT ON<br>181 in pipe     | P2-C-M     |
| EE-14                                    | STICK        | 16.7                                     | 2.3    | ending at 20'                       |            |
| EEG-112                                  | STICK        | 13.2                                     | 0.7    |                                     | ST-G       |

## P.T.O. CALIBRATION

CALIBRATED ON: 6-27-00 (DATE)

CALIBRATED BY: CMU (SIGN)

STANDARDS USED: ISO 9001/100

STANDARDS TRACEABLE TO: NIST

ENVIRONMENTAL CONDITIONS ARE

SUITABLE FOR CALIBRATION (V) N

(314) 674-8957

P1-C-

GSI Job No. G-2876  
Issued: January 21, 2005



## **EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C**

Sauget Area 1, Sauget and Cahokia, Illinois

### **ATTACHMENT 4 – SELECTED BORING LOGS**

Boring logs for wells ST-G, ST-H, ST-I, ST-L, and ST-N

*(Source: pages 187A-1 to 187A-20, Volume 3 of Field Sampling Report,  
O'Brien & Gere, 2000)*

| O'BRIEN & GERE ENGINEERS, INC.   |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-G-D  |                                  |  |  |
|--|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|--|--|
| Client: Solutia Inc.   |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                 |  | Page 1 of 4<br>Location: West of Site G   |                                  |  |  |
| Proj. Loc: Sauget Area 1   |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 01/06/00<br>End Date: 01/07/00  |                                  |  |  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: William E. Wright, RG |     |                 |              |                     |              | Screen<br>Riser   |  | <input type="checkbox"/> = <input type="checkbox"/> \ <input type="checkbox"/><br><input type="checkbox"/> Sand Pack<br><input checked="" type="checkbox"/> Bentonite |                                  |  |  |
| Depth<br>Below<br>Grade  | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |  |  |
| 0  | 1   | 0-2             | 1            | 24/15               | 3            | Dusky brown 5YR2/2, dry, sandy, silty clay soil                       |  |   | 0.0                              |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 1  |     |                 | 1            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 2  | 2   | 2-4             | 2            | 24/15               | 8            | Same as above to approx. 3' BEG                                       |  |   | 0.0                              |  |  |
|  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 3  |     |                 | 4            |                     |              | Pale yellowish brown 10YR6/2, silty sand; dry                         |  |   |                                  |  |  |
|  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 4  | 3   | 4-6             | 2            | 24/17               | 7            | Pale yellowish brown 10YR6/2, silty fine sand; dry                    |  |   | 0.0                              |  |  |
|  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 5  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 6  | 4   | 6-8             | 2            | 24/15               | 5            | Same as above; moist; slightly clayey in 0.5" to 1" layers (2)        |  |   | 0.0                              |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 7  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 8  | 5   | 8-10            | 3            | 24/13               | 5            | Same as above   |  |   | 0.0                              |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 9  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 3            |                     |              | Wet at approx. 9.5' BEG   |  |   |                                  |  |  |
| 10   | 6   | 10-12           | 2            | 24/16               | 5            | Same as above; wet  |  |   |                                  |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 11   |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 12   | 7   | 12-14           | 2            | 24/17               | 4            | Dark yellowish brown 10YR4/2, wet, silty, fine sand                   |  |   | 0.0                              |  |  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 13   |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 14   | 8   | 14-16           | 1            | 24/17               | 3            | Same as above; moderate yellowish brown                               |  |   | 0.0                              |  |  |
|  |     |                 | 1            |                     |              |   |  |   |                                  |  |  |
| 15   |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 16   | 9   | 16-18           | 3            | 24/16               | 10           | Pale yellowish brown, wet, silty, fine sand                           |  |   | 0.0                              |  |  |
|  |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 17   |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 18   | 10  | 18-20           | 2            | 24/16               | 9            | Same as above   |  |   | 0.0                              |  |  |
|  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 19   |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 20   | 11  | 20-22           | 7            | 24/15               | 20           | Same as above to approx. 21.5 ft BEG                                  |  |   | 0.0                              |  |  |
|  |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 21   |     |                 | 11           |                     |              |   |  |   |                                  |  |  |
|  |     |                 | 11           |                     |              | Pale yellowish brown 10YR 6/2, fine sand; trace to a little silt; wet |  |   | 0.0                              |  |  |
| 22   | 12  | 22-24           | 5            | 24/12               | 18           |   |  |   |                                  |  |  |
|  |     |                 | 6            |                     |              |   |  |   |                                  |  |  |
| 23   |     |                 | 12           |                     |              | 2" dark brown silt and sand lens                                      |  |   |                                  |  |  |
|  |     |                 | 14           |                     |              | Pale yellowish brown 10YR 6/2 fine to medium sand; wet; little silt   |  |   |                                  |  |  |
| Boring collapsed and grouted to 3 feet below surface, 0-3 feet restored with soil              |     |                 |              |                     |              |   |  |   |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC.   |     |                 |              |                     |              | TEST BORING LOG   | REPORT OF BORING<br>ST-G-D               |   |                                  |
|--|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|
| Client: Solutia Inc.   |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb   |  | Page 2 of 4<br>Location: West of Site G   |                                  |
| Proj. Loc: Sauget Area 1   |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 01/06/00<br>End Date: 01/07/00  |                                  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: William E. Wright, RG |     |                 |              |                     |              | Screen<br>Riser   |  | <input type="checkbox"/> Grout<br><input type="checkbox"/> Sand Pack<br><input checked="" type="checkbox"/> Bentonite |                                  |
| Depth<br>Below<br>Grade  | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |
| 24   | 13  | 24-26           | 8            | 24/11               | 33           | Pale yellowish brown 10YR 6/2, fine to medium sand; wet;<br>some black specks; a little silt; trace coarse sand |  |   | 0.0                              |
|  |     |                 | 14           |                     |              |   |  |   |                                  |
| 25   |     |                 | 19           |                     |              |   |  |   |                                  |
|  |     |                 | 19           |                     |              |   |  |   |                                  |
| 26   | 14  | 26-28           | 15           | 24/13               | 43           | Same as above   |  |   | 0.0                              |
|  |     |                 | 19           |                     |              |   |  |   |                                  |
| 27   |     |                 | 24           |                     |              |   |  |   |                                  |
|  |     |                 | 24           |                     |              |   |  |   |                                  |
| 28   | 15  | 28-30           | 9            | 24/10               | 22           | Same as above   |  |   | 0.0                              |
|  |     |                 | 12           |                     |              |   |  |   |                                  |
| 29   |     |                 | 10           |                     |              |   |  |   |                                  |
|  |     |                 | 14           |                     |              |   |  |   |                                  |
| 30   | 16  | 30-32           | 7            | 24/12               | 15           | Same as above with a 0.5" medium/coarse sand<br>seam at 31 ft   |  |   | 0.0                              |
|  |     |                 | 7            |                     |              |   |  |   |                                  |
| 31   |     |                 | 8            |                     |              |   |  |   |                                  |
|  |     |                 | 9            |                     |              |   |  |   |                                  |
| 32   | 17  | 32-34           | 10           | 24/11               | 16           | Same as above, except a dark yellowish brown<br>10YR 4/2  |  |   | 0.0                              |
|  |     |                 | 8            |                     |              |   |  |   |                                  |
| 33   |     |                 | 8            |                     |              |   |  |   |                                  |
|  |     |                 | 10           |                     |              |   |  |   |                                  |
| 34   | 18  | 34-36           | 9            | 24/12               | 30           | Same as above to approx. 35.5 ft; then same<br>but a finer grained sand   |  |   | 0.0                              |
|  |     |                 | 15           |                     |              |   |  |   |                                  |
| 35   |     |                 | 15           |                     |              |   |  |   |                                  |
|  |     |                 | 15           |                     |              |   |  |   |                                  |
| 36   | 19  | 36-38           | 10           | 24/18               | 35           | Fine grained, dark yellowish brown, wet, fine<br>silty sand to 37.7 ft; then medium grained sand                |  |   | 0.0                              |
|  |     |                 | 15           |                     |              |   |  |   |                                  |
| 37   |     |                 | 20           |                     |              |   |  |   |                                  |
|  |     |                 | 27           |                     |              |   |  |   |                                  |
| 38   | 20  | 38-40           | 10           | 24/12               | 37           | Fine grained grading to medium grained, dark<br>yellowish brown 10YR 4/2, wet sand                              |  |   | 0.0                              |
|  |     |                 | 15           |                     |              |   |  |   |                                  |
| 39   |     |                 | 20           |                     |              |   |  |   |                                  |
|  |     |                 | 20           |                     |              |   |  |   |                                  |
| 40   | 21  | 40-42           | 10           | 24/18               | 37           | Fine grained grading to very fine grained, wet,<br>medium dark gray N4 sand                                     |  |   | 0.0                              |
|  |     |                 | 16           |                     |              |   |  |   |                                  |
| 41   |     |                 | 21           |                     |              |   |  |   |                                  |
|  |     |                 | 25           |                     |              |   |  |   |                                  |
| 42   | 22  | 42-44           | 10           | 24/10               | 25           | Medium dark gray N4, fine to very fine grained, wet,<br>sand  |  |   | 0.0                              |
|  |     |                 | 10           |                     |              |   |  |   |                                  |
| 43   |     |                 | 15           |                     |              |   |  |   |                                  |
|  |     |                 | 15           |                     |              |   |  |   |                                  |
| 44   | 23  | 44-46           | 7            | 24/11               | 37           | Same as above   |  |   | 0.0                              |
|  |     |                 | 16           |                     |              |   |  |   |                                  |
| 45   |     |                 | 21           |                     |              |   |  |   |                                  |
|  |     |                 | 27           |                     |              |   |  |   |                                  |
| 46   | 24  | 46-48           | 11           | 24/10               | 33           | Same as above; medium gray N4 very fine to fine<br>grained, wet sand  |  |   | 0.0                              |
|  |     |                 | 11           |                     |              |   |  |   |                                  |
| 47   |     |                 | 22           |                     |              |   |  |   |                                  |
|  |     |                 | 27           |                     |              |   |  |   |                                  |

| O'BRIEN & GERE ENGINEERS, INC.       |     |                 |              |                     |              | TEST BORING LOG  | REPORT OF BORING<br>ST-G-D               |  |                                  |
|--------------------------------------|-----|-----------------|--------------|---------------------|--------------|--|--|--|----------------------------------|
| Client: Solutia Inc.                 |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb  |  | Page 3 of 4<br>Location: West of Site G                        |                                  |
| Proj. Loc: Sauget Area 1             |     |                 |              |                     |              | Fall: 30"  |  | Start Date: 01/06/00<br>End Date: 01/07/00                     |                                  |
| File No.: 10040/23548                |     |                 |              |                     |              |  |  | Screen <input type="checkbox"/> Riser <input type="checkbox"/> |                                  |
| Boring Company: Harriss Drilling     |     |                 |              |                     |              |  |  | Grout <input type="checkbox"/>                                 |                                  |
| Foreman: Tim Crank                   |     |                 |              |                     |              |  |  | Sand Pack <input type="checkbox"/>                             |                                  |
| OBG Geologist: William E. Wright, RG |     |                 |              |                     |              |  |  | Bentonite <input type="checkbox"/>                             |                                  |
| Depth<br>Below<br>Grade              | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description   | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed  | Field<br>Testing<br>HNU<br>(ppm) |
| 48                                   | 25  | 48-50           | 12           | 24/12               | 52           | Medium gray N5, wet, very fine to fine grained sand; trace silt  |  |  | 0.0                              |
| 49                                   |     |                 | 25           |                     |              |  |  |  |                                  |
|                                      |     |                 | 27           |                     |              |  |  |  |                                  |
|                                      |     |                 | 18           |                     |              |  |  |  |                                  |
| 50                                   | 26  | 50-52           | 11           | 24/8                | 31           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 14           |                     |              |  |  |  |                                  |
| 51                                   |     |                 | 17           |                     |              |  |  |  |                                  |
|                                      |     |                 | 18           |                     |              |  |  |  |                                  |
| 52                                   | 27  | 52-54           | 13           | 24/12               | 57           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 26           |                     |              |  |  |  |                                  |
| 53                                   |     |                 | 31           |                     |              |  |  |  |                                  |
|                                      |     |                 | 31           |                     |              |  |  |  |                                  |
| 54                                   | 28  | 54-56           | 10           | 24/13               | 48           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 24           |                     |              |  |  |  |                                  |
| 55                                   |     |                 | 24           |                     |              |  |  |  |                                  |
|                                      |     |                 | 23           |                     |              |  |  |  |                                  |
| 56                                   | 29  | 56-58           | 11           | 24/10               | 37           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 16           |                     |              |  |  |  |                                  |
| 57                                   |     |                 | 21           |                     |              |  |  |  |                                  |
|                                      |     |                 | 22           |                     |              |  |  |  |                                  |
| 58                                   | 30  | 58-60           | 49           | 24/13               | 35           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 15           |                     |              |  |  |  |                                  |
| 59                                   |     |                 | 20           |                     |              |  |  |  |                                  |
|                                      |     |                 | 24           |                     |              |  |  |  |                                  |
| 60                                   | 31  | 60-62           | 14           | 24/10               | 40           | Same as above to 61.5 ft.; 0.25" white shell layer at 61.5 ft; medium dark gray N4 and medium grained size at 61.5-62 ft; trace to some coarse sand to approx. 63 ft |  |  | 0.0                              |
|                                      |     |                 | 20           |                     |              |  |  |  |                                  |
| 61                                   |     |                 | 20           |                     |              |  |  |  |                                  |
|                                      |     |                 | 24           |                     |              |  |  |  |                                  |
| 62                                   | 32  | 62-64           | 19           | 24/14               | 44           | Medium dark gray N4, wet, fine grained sand; some silt; disseminated black specks  |  |  | 0.0                              |
|                                      |     |                 | 21           |                     |              |  |  |  |                                  |
| 63                                   |     |                 | 23           |                     |              |  |  |  |                                  |
|                                      |     |                 | 25           |                     |              |  |  |  |                                  |
| 64                                   | 33  | 64-66           | 7            | 24/12               | 24           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 11           |                     |              |  |  |  |                                  |
| 65                                   |     |                 | 13           |                     |              |  |  |  |                                  |
|                                      |     |                 | 15           |                     |              |  |  |  |                                  |
| 66                                   | 34  | 66-68           | 9            | 24/12               | 31           | Medium dark gray N4, wet, fine to very fine grained sand with black specks; trace of fine-medium gravel  |  |  | 0.0                              |
|                                      |     |                 | 14           |                     |              |  |  |  |                                  |
| 67                                   |     |                 | 17           |                     |              |  |  |  |                                  |
|                                      |     |                 | 20           |                     |              |  |  |  |                                  |
| 68                                   | 35  | 68-70           | 8            | 24/10               | 24           | Same as above  |  |  | 0.0                              |
|                                      |     |                 | 11           |                     |              |  |  |  |                                  |
| 69                                   |     |                 | 13           |                     |              |  |  |  |                                  |
|                                      |     |                 | 15           |                     |              |  |  |  |                                  |
| 70                                   | 36  | 70-72           | 8            | 24/12               | 25           | Medium dark gray N4, medium and coarse sand, with fine sand; some gravel up to 1" in diameter; coarse toward bottom  |  |  | 0.0                              |
|                                      |     |                 | 14           |                     |              |  |  |  |                                  |
| 71                                   |     |                 | 11           |                     |              |  |  |  |                                  |
|                                      |     |                 | 8            |                     |              |  |  |  |                                  |





| O'BRIEN & GERE ENGINEERS, INC.  |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-H-D   |                                  |                                 |  |
|---|-----|-----------------|--------------|---------------------|--------------|---|--|--|----------------------------------|---------------------------------|--|
| Client: Solutia Inc.  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb   |  | Page 2 of 4<br>Location: Site H  |                                  |                                 |  |
| Proj. Loc: Sauget Area 1  |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/06/99<br>End Date: 12/08/99   |                                  |                                 |  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: Tony Finch |     |                 |              |                     |              | Screen<br>Riser   |  | <input type="checkbox"/> = <input type="checkbox"/> \ <input type="checkbox"/><br><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |                                  | Grout<br>Sand Pack<br>Bentonite |  |
| Depth<br>Below<br>Grade   | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed  | Field<br>Testing<br>PID<br>(ppm) |                                 |  |
| 24  | 13  |                 | 2            | 24"/12"             | 5            | Moderate yellowish brown 10YR5/4, wet, loose medium sand; trace fine gravel; grades to medium light grey N6 |  |  | 0.0                              |                                 |  |
| 25  |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 6            |                     |              |   |  |  |                                  |                                 |  |
| 26  | 14  |                 | 5            | 24"/18"             | 16           | Medium Grey N5, wet, loose, fine to medium sand; trace silt   |  |  | 0.0                              |                                 |  |
|   |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
| 27  |     |                 | 9            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 12           |                     |              |   |  |  |                                  |                                 |  |
| 28  | 15  |                 | 3            | 24"/12"             | 18           | Medium light grey N6, wet, loose, fine sand; trace silt   |  |  | 0.0                              |                                 |  |
|   |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
| 29  |     |                 | 11           |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 15           |                     |              |   |  |  |                                  |                                 |  |
| 30  | 16  |                 | 3            | 24"/18"             | 12           | Medium light grey N6, wet, fine, loose sand; trace silt; grades to moderate yellowish brown 10YR5/4         |  |  | 0.0                              |                                 |  |
|   |     |                 | 4            |                     |              |   |  |  |                                  |                                 |  |
| 31  |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
| 32  | 17  |                 | 4            | 24"/24"             | 22           | Moderate yellowish brown 10YR5/4, wet, loose fine sand; some silt; grades to medium grey N5                 |  |  | 0.0                              |                                 |  |
|   |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
| 33  |     |                 | 14           |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 16           |                     |              |   |  |  |                                  |                                 |  |
| 34  | 18  |                 | 4            | 24"/18"             | 12           | Medium grey N5, wet, loose, silty fine sand   |  |  | 0.0                              |                                 |  |
|   |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
| 35  |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 9            |                     |              |   |  |  |                                  |                                 |  |
| 36  | 19  |                 | 1            | 24"/18"             | 10           | Medium grey N5, wet, loose, medium sand; trace silt   |  |  | 0.0                              |                                 |  |
|   |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
| 37  |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 9            |                     |              | Clay lens 1-2" @ 37.5'  |  |  |                                  |                                 |  |
| 38  | 20  |                 | 2            | 24"/12"             | 17           | Medium grey N5, wet, fine, loose sand; trace silt   |  |  | 0.0                              |                                 |  |
|   |     |                 | 9            |                     |              |   |  |  |                                  |                                 |  |
| 39  |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
| 40  | 21  |                 | 3            | 24"/12"             | 6            | Same as above   |  |  | 0.0                              |                                 |  |
|   |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
| 41  |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
| 42  | 22  |                 | 1            | 24"/12"             | 6            | Same as above   |  |  | 0.0                              |                                 |  |
|   |     |                 | 2            |                     |              |   |  |  |                                  |                                 |  |
| 43  |     |                 | 4            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 4            |                     |              |   |  |  |                                  |                                 |  |
| 44  | 23  |                 | 2            | 24"/18"             | 9            | Same as above; grades from fine to coarse sand; trace silt  |  |  | 0.0                              |                                 |  |
|   |     |                 | 4            |                     |              |   |  |  |                                  |                                 |  |
| 45  |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 10           |                     |              |   |  |  |                                  |                                 |  |
| 46  | 24  |                 | 1            | 24"/24"             | 5            | Wet, poorly sorted, loose, fine to coarse sand; trace silt  |  |  | 0.0                              |                                 |  |
|   |     |                 | 2            |                     |              |   |  |  |                                  |                                 |  |
| 47  |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
|   |     |                 | 2            |                     |              |   |  |  |                                  |                                 |  |



| O'BRIEN & GERE ENGINEERS, INC.                            |     |                 |              |                     |              | TEST BORING LOG   | REPORT OF BORING<br>ST-H-D               |  |                                  |  |
|---|-----|-----------------|--------------|---------------------|--------------|---|--|--|----------------------------------|--|
| Client: Solutia Inc.                                      |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                   |  | Page 4 of 4<br>Location: Site H            |                                  |  |
| Proj. Loc: Sauget Area 1                                  |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/06/99<br>End Date: 12/08/99 |                                  |  |
| File No.: 10040/23548                                     |     |                 |              |                     |              |   |  |  |                                  |  |
| Boring Company: Harriss Drilling                          |     |                 |              |                     |              | Screen  |  | =  | Grout                            |  |
| Foreman: Tim Crank  |     |                 |              |                     |              | Riser   |  | \  | Sand Pack                        |  |
| OBG Geologist: Tony Finch                                 |     |                 |              |                     |              |   |  | \  | Bentonite                        |  |
| Depth<br>Below<br>Grade                                   | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed                        | Field<br>Testing<br>PID<br>(ppm) |  |
| 72  | 37  |                 | 8            | 24"/18"             | 16           | Wet, loose, coarse sand; grades to medium;<br>trace silt                |  |  | 0.0                              |  |
|   |     |                 | 8            |                     |              |   |  |  |                                  |  |
| 73  |     |                 | 8            |                     |              |   |  |  |                                  |  |
|   |     |                 | 12           |                     |              |   |  |  |                                  |  |
| 74  | 38  |                 | —            | 24"/18"             | 4            | Wet, very loose, medium to coarse sand;<br>trace silt                   |  |  | 0.0                              |  |
|   |     |                 | —            |                     |              |   |  |  |                                  |  |
| 75  |     |                 | 4            |                     |              |   |  |  |                                  |  |
|   |     |                 | 10           |                     |              |   |  |  |                                  |  |
| 76  | 39  |                 | 4            | 24"/24"             | 7            | Wet, loose, fine gravel; grades to medium to<br>coarse sand; trace silt |  |  | 0.0                              |  |
|   |     |                 | 4            |                     |              |   |  |  |                                  |  |
| 77  |     |                 | 3            |                     |              |   |  |  |                                  |  |
|   |     |                 | 3            |                     |              |   |  |  |                                  |  |
| 78  | 40  |                 | 6            | 24"/18"             | 16           | Wet, medium grey N5, loose, coarse sand/<br>fine gradel; trace silt     |  |  | 0.0                              |  |
|   |     |                 | 7            |                     |              |   |  |  |                                  |  |
| 79  |     |                 | 9            |                     |              |   |  |  |                                  |  |
|   |     |                 | 10           |                     |              |   |  |  |                                  |  |
| 80  | 41  |                 |              |                     |              |   |  |  |                                  |  |
|   |     |                 |              |                     |              | EOB @ 80 fbg  |  |  |                                  |  |
| 81  |     |                 |              |                     |              |   |  |  |                                  |  |
| 82  |     |                 |              |                     |              |   |  |  |                                  |  |
| 83  |     |                 |              |                     |              |   |  |  |                                  |  |
| 84  |     |                 |              |                     |              |   |  |  |                                  |  |
| 85  |     |                 |              |                     |              |   |  |  |                                  |  |
| 86  |     |                 |              |                     |              |   |  |  |                                  |  |
| 87  |     |                 |              |                     |              |   |  |  |                                  |  |
| 88  |     |                 |              |                     |              |   |  |  |                                  |  |
| 89  |     |                 |              |                     |              |   |  |  |                                  |  |
| 90  |     |                 |              |                     |              |   |  |  |                                  |  |
| 91  |     |                 |              |                     |              |   |  |  |                                  |  |
| 92  |     |                 |              |                     |              |   |  |  |                                  |  |
| 93  |     |                 |              |                     |              |   |  |  |                                  |  |
| 94  |     |                 |              |                     |              |   |  |  |                                  |  |
| 95  |     |                 |              |                     |              |   |  |  |                                  |  |
| Subsequent to soil sampling, hole was tremied with grout. |     |                 |              |                     |              |   |  |  |                                  |  |

| O'BRIEN & GERE ENGINEERS, INC.        |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-I-D                                   |                                  |  |  |
|---------------------------------------|-----|-----------------|--------------|---------------------|--------------|---|--|--|----------------------------------|--|--|
| Client: Solutia Inc.                  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb           |  | Page 1 of 4<br>Location: Site I                              |                                  |  |  |
| Proj. Loc: Sauget Area 1              |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/17/99<br>End Date: 12/21/99                   |                                  |  |  |
| File No.: 10040/23548                 |     |                 |              |                     |              |   |  | Screen = <input type="checkbox"/> \ <input type="checkbox"/> |                                  |  |  |
| Boring Company: Harriss Drilling      |     |                 |              |                     |              |   |  | Grout  |                                  |  |  |
| Foreman: Tim Crank                    |     |                 |              |                     |              |   |  | Sand Pack  |                                  |  |  |
| OBG Geologist: Tony Finch/Bill Wright |     |                 |              |                     |              |   |  | Bentonite  |                                  |  |  |
| Depth<br>Below<br>Grade               | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed  | Field<br>Testing<br>PID<br>(ppm) |  |  |
| 0                                     | 1   |                 | 1            | 24"/12"             | 6            | Moderate yellowish brown 10YR5/4, damp clay,<br>little silt     |  |  | 0.0                              |  |  |
|                                       |     |                 | 2            |                     |              |   |  |  |                                  |  |  |
| 1                                     |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 6            |                     |              |   |  |  |                                  |  |  |
| 2                                     | 2   |                 | 5            | 24"/12"             | 15           | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |  |  |
| 3                                     |     |                 | 8            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 9            |                     |              |   |  |  |                                  |  |  |
| 4                                     | 3   |                 | 4            | 24"/18"             | 8            | Pale yellowish brown 10YR6/2, dry silt, trace clay              |  |  | 0.0                              |  |  |
|                                       |     |                 | 4            |                     |              | Pale yellowish brown 10YR6/2, damp, fine sand;<br>trace silt    |  |  |                                  |  |  |
| 5                                     |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
| 6                                     | 4   |                 | 2            | 24"/7               | 8            | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 3            |                     |              |   |  |  |                                  |  |  |
| 7                                     |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 6            |                     |              |   |  |  |                                  |  |  |
| 8                                     | 5   |                 | 2            | 24"/18"             | 8            | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 3            |                     |              |   |  |  |                                  |  |  |
| 9                                     |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
| 10                                    | 6   |                 | 3            | 24"/24"             | 11           | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
| 11                                    |     |                 | 7            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 8            |                     |              |   |  |  |                                  |  |  |
| 12                                    | 7   |                 | 2            | 24"/18"             | 7            | Moderate yellowish brown 10YR5/4, wet, fine sand;<br>trace silt |  |  | 0.0                              |  |  |
|                                       |     |                 | 2            |                     |              |   |  |  |                                  |  |  |
| 13                                    |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 5            |                     |              |   |  |  |                                  |  |  |
| 14                                    | 8   |                 | 2            | 24"/18"             | 19           | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |  |  |
| 15                                    |     |                 | 12           |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 13           |                     |              |   |  |  |                                  |  |  |
| 16                                    | 9   |                 | 3            | 24"/24"             | 16           | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |  |  |
| 17                                    |     |                 | 9            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 11           |                     |              |   |  |  |                                  |  |  |
| 18                                    | 10  |                 | 15           | 24"/12"             | 30           | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 15           |                     |              |   |  |  |                                  |  |  |
| 19                                    |     |                 | 15           |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |  |  |
| 20                                    | 11  |                 | 4            | 24"/7               | 8            | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
| 21                                    |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 6            |                     |              |   |  |  |                                  |  |  |
| 22                                    | 12  |                 | 5            | 24"/18"             | 5            | Same as above   |  |  | 0.0                              |  |  |
|                                       |     |                 | 4            |                     |              |   |  |  |                                  |  |  |
| 23                                    |     |                 | 1            |                     |              |   |  |  |                                  |  |  |
|                                       |     |                 | 2            |                     |              |   |  |  |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC.        |     |                 |              |                     |              | TEST BORING LOG                                       |  | REPORT OF BORING<br>ST-I-D                 |                                  |           |  |
|---------------------------------------|-----|-----------------|--------------|---------------------|--------------|---|--|--|----------------------------------|-----------|--|
| Client: Solutia Inc.                  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb |  | Page 2 of 4<br>Location: Site I            |                                  |           |  |
| Proj. Loc: Sauget Area 1              |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/17/99<br>End Date: 12/21/99 |                                  |           |  |
| Boring Company: Harriss Drilling      |     |                 |              |                     |              | Screen  |  | =  |                                  | Grout     |  |
| Foreman: Tim Crank                    |     |                 |              |                     |              | Riser   |  |  |                                  | Sand Pack |  |
| OBG Geologist: Tony Finch/Bill Wright |     |                 |              |                     |              |   |  |  |                                  | Bentonite |  |
| Depth<br>Below<br>Grade               | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description                                    | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed                        | Field<br>Testing<br>PID<br>(ppm) |           |  |
| 24                                    | 13  |                 | 3            | 24"/12"             | 13           | Same as above; little medium sand                     |  |  | 0.0                              |           |  |
|                                       |     |                 | 5            |                     |              |   |  |  |                                  |           |  |
| 25                                    |     |                 | 8            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 6            |                     |              |   |  |  |                                  |           |  |
| 26                                    | 14  |                 | 8            | 24"/12"             | 17           | Moderate yellowish brown 10YR5/4, wet, fine sand;     |  |  | 0.0                              |           |  |
|                                       |     |                 | 9            |                     |              | trace silt  |  |  |                                  |           |  |
| 27                                    |     |                 | 8            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 11           |                     |              |   |  |  |                                  |           |  |
| 28                                    | 15  |                 | 3            | 24"/12"             | 14           | Same as above   |  |  | 0.0                              |           |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |           |  |
| 29                                    |     |                 | 7            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 7            |                     |              |   |  |  |                                  |           |  |
| 30                                    | 16  |                 | 5            | 24"/6"              | 11           | Same as above   |  |  | 0.0                              |           |  |
|                                       |     |                 | 6            |                     |              |   |  |  |                                  |           |  |
| 31                                    |     |                 | 5            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 4            |                     |              |   |  |  |                                  |           |  |
| 32                                    | 17  |                 | 3            | 24"/6"              | 10           | Same as above; little medium sand; trace              |  |  | 0.0                              |           |  |
|                                       |     |                 | 5            |                     |              | fine gravel   |  |  |                                  |           |  |
| 33                                    |     |                 | 5            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 4            |                     |              |   |  |  |                                  |           |  |
| 34                                    | 18  |                 | 3            | 24"/6"              | 3            | Wet, coarse sand; trace silt; little fine gravel      |  |  | 0.0                              |           |  |
|                                       |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
| 35                                    |     |                 | 2            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 2            |                     |              |   |  |  |                                  |           |  |
| 36                                    | 19  |                 | 2            | 24"/12"             | 2            | Wet, fine gravel; grades to medium sand (dark         |  |  | 0.0                              |           |  |
|                                       |     |                 | 1            |                     |              | gray N3)  |  |  |                                  |           |  |
| 37                                    |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
| 38                                    | 20  |                 | —            | 24"/NR              | —            | No Recovery   |  |  | —                                |           |  |
|                                       |     |                 | —            |                     |              |   |  |  |                                  |           |  |
| 39                                    |     |                 | —            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | —            |                     |              |   |  |  |                                  |           |  |
| 40                                    | 21  |                 | —            | 24"/12"             | 4            | Medium olive gray 5Y5/1, wet silt; some fine sand     |  |  | 0.0                              |           |  |
|                                       |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
| 41                                    |     |                 | 3            |                     |              | Olive gray 5Y4/1, wet, loose, fine sand; trace silt   |  |  |                                  |           |  |
|                                       |     |                 | 5            |                     |              |   |  |  |                                  |           |  |
| 42                                    | 22  |                 | —            | 24"/12"             | 2            | Medium olive gray 5Y5/1, wet, fine sand; some silt    |  |  | 0.0                              |           |  |
|                                       |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
| 43                                    |     |                 | 1            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 3            |                     |              |   |  |  |                                  |           |  |
| 44                                    | 23  |                 | 2            | 24"/12"             | 13           | Moderate yellowish brown 10YR5/4, wet, fine sand;     |  |  | 0.0                              |           |  |
|                                       |     |                 | 5            |                     |              | trace silt  |  |  |                                  |           |  |
| 45                                    |     |                 | 8            |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 11           |                     |              |   |  |  |                                  |           |  |
| 46                                    | 24  |                 | 10           | 24"/12"             | 32           | Same as above   |  |  | 0.0                              |           |  |
|                                       |     |                 | 15           |                     |              |   |  |  |                                  |           |  |
| 47                                    |     |                 | 17           |                     |              |   |  |  |                                  |           |  |
|                                       |     |                 | 18           |                     |              |   |  |  |                                  |           |  |

| O'BRIEN & GERE ENGINEERS, INC.        |     |                 |              |                     |              | TEST BORING LOG  |  | REPORT OF BORING<br>ST-I-D   |                                  |  |  |
|---------------------------------------|-----|-----------------|--------------|---------------------|--------------|--|--|--|----------------------------------|--|--|
| Client: Solutia Inc.                  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                                |  | Page 3 of 4<br>Location: Site I  |                                  |  |  |
| Proj. Loc: Sauget Area 1              |     |                 |              |                     |              | Fall: 30"  |  | Start Date: 12/17/99<br>End Date: 12/21/99   |                                  |  |  |
| File No.: 10040/23548                 |     |                 |              |                     |              |  |  | Screen <input type="checkbox"/> = <input type="checkbox"/> 1<br>Riser <input type="checkbox"/> |                                  |  |  |
| Boring Company: Harriss Drilling      |     |                 |              |                     |              |  |  | Grout <input type="checkbox"/>   |                                  |  |  |
| Foreman: Tim Crank                    |     |                 |              |                     |              |  |  | Sand Pack <input type="checkbox"/>   |                                  |  |  |
| OBG Geologist: Tony Finch/Bill Wright |     |                 |              |                     |              |  |  | Bentonite <input type="checkbox"/>   |                                  |  |  |
| Depth<br>Below<br>Grade               | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description   | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed  | Field<br>Testing<br>PID<br>(ppm) |  |  |
| 48                                    | 25  |                 | 8            | 24"/18"             | 32           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 15           |                     |              |  |  |  |                                  |  |  |
| 49                                    |     |                 | 17           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 20           |                     |              |  |  |  |                                  |  |  |
| 50                                    | 26  |                 | 18           | 24"/12"             | 35           | Moderate yellowish brown 10YR5/4, fine sand,<br>trace silt                           |  |  | 0.0                              |  |  |
|                                       |     |                 | 21           |                     |              |  |  |  |                                  |  |  |
| 51                                    |     |                 | 14           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 12           |                     |              |  |  |  |                                  |  |  |
| 52                                    | 27  |                 | 5            | 24"/18"             | 20           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 10           |                     |              |  |  |  |                                  |  |  |
| 53                                    |     |                 | 10           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 20           |                     |              |  |  |  |                                  |  |  |
| 54                                    | 28  |                 | 16           | 24"/20"             | 38           | Olive gray 5Y4/1 fine sand; trace to some<br>silt; wet                               |  |  | 0.0                              |  |  |
|                                       |     |                 | 19           |                     |              |  |  |  |                                  |  |  |
| 55                                    |     |                 | 19           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 16           |                     |              |  |  |  |                                  |  |  |
| 56                                    | 29  |                 | 12           | 24"/18"             | 32           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 15           |                     |              |  |  |  |                                  |  |  |
| 57                                    |     |                 | 17           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 18           |                     |              |  |  |  |                                  |  |  |
| 58                                    | 30  |                 | 4            | 24"/10"             | 6            | Medium gray-olive gray 5Y5/1, coarse sand; trace<br>to some silt; wet; loose         |  |  | 0.0                              |  |  |
|                                       |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
| 59                                    |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
| 60                                    | 31  |                 | 3            | 24"/12"             | 6            | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
| 61                                    |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 4            |                     |              |  |  |  |                                  |  |  |
| 62                                    | 32  |                 | 3            | 24"/19"             | 13           | Same as above to approx. 64.7 ft; then medium<br>gray fine, slightly silty, wet sand |  |  | 0.0                              |  |  |
|                                       |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
| 63                                    |     |                 | 10           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 16           |                     |              |  |  |  |                                  |  |  |
| 64                                    | 33  |                 | 22           | 24"/20"             | 68           | Medium gray N5, fine sand; some silt; wet  |  |  | 0.0                              |  |  |
|                                       |     |                 | 32           |                     |              |  |  |  |                                  |  |  |
| 65                                    |     |                 | 36           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 22           |                     |              |  |  |  |                                  |  |  |
| 66                                    | 34  |                 | 13           | 24"/14"             | 46           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 20           |                     |              |  |  |  |                                  |  |  |
| 67                                    |     |                 | 26           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 20           |                     |              |  |  |  |                                  |  |  |
| 68                                    | 35  |                 | 6            | 24"/16"             | 34           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 14           |                     |              |  |  |  |                                  |  |  |
| 69                                    |     |                 | 20           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 23           |                     |              |  |  |  |                                  |  |  |
| 70                                    | 36  |                 | 15           | 24"/18"             | 47           | Same as above  |  |  | 0.0                              |  |  |
|                                       |     |                 | 19           |                     |              |  |  |  |                                  |  |  |
| 71                                    |     |                 | 28           |                     |              |  |  |  |                                  |  |  |
|                                       |     |                 | 30           |                     |              |  |  |  |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC.  |     |                 |              |                     |              | TEST BORING LOG   | REPORT OF BORING<br>ST-I-D               |   |                                  |
|---|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|
| Client: Solutia Inc.  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb             |  | Page 4 of 4<br>Location: Site I   |                                  |
| Proj. Loc: Sauget Area 1  |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/17/99<br>End Date: 12/21/99  |                                  |
| File No.: 10040/23548   |     |                 |              |                     |              |   |  |   |                                  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: Tony Finch/Bill Wright |     |                 |              |                     |              | Screen <input type="checkbox"/><br>Riser <input type="checkbox"/> |  | <input type="checkbox"/> Grout<br><input type="checkbox"/> Sand Pack<br><input checked="" type="checkbox"/> Bentonite |                                  |
| Depth<br>Below<br>Grade   | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>PID<br>(ppm) |
| 72  | 37  |                 | 11           | 24"/14"             | 41           | Same as above   |  |   | 0.0                              |
|   |     |                 | 19           |                     |              |   |  |   |                                  |
| 73  |     |                 | 22           |                     |              |   |  |   |                                  |
|   |     |                 | 27           |                     |              |   |  |   |                                  |
| 74  | 38  |                 | 12           | 24"/14"             | 42           | Same as above   |  |   | 0.0                              |
|   |     |                 | 18           |                     |              |   |  |   |                                  |
| 75  |     |                 | 24           |                     |              |   |  |   |                                  |
|   |     |                 | 26           |                     |              |   |  |   |                                  |
| 76  | 39  |                 | 13           | 24"/13"             | 34           | Same as above   |  |   | 0.0                              |
|   |     |                 | 15           |                     |              |   |  |   |                                  |
| 77  |     |                 | 19           |                     |              |   |  |   |                                  |
|   |     |                 | 26           |                     |              |   |  |   |                                  |
| 78  | 40  |                 | 12           | 24"/14"             | 59           | Same as above   |  |   | 0.0                              |
|   |     |                 | 24           |                     |              |   |  |   |                                  |
| 79  |     |                 | 35           |                     |              |   |  |   |                                  |
|   |     |                 | 27           |                     |              |   |  |   |                                  |
| 80  | 41  |                 |              |                     |              |   |  |   |                                  |
|   |     |                 |              |                     |              | EOB @ 80 fbg  |  |   |                                  |
| 81  |     |                 |              |                     |              |   |  |   |                                  |
| 82  |     |                 |              |                     |              |   |  |   |                                  |
| 83  |     |                 |              |                     |              |   |  |   |                                  |
| 84  |     |                 |              |                     |              |   |  |   |                                  |
| 85  |     |                 |              |                     |              |   |  |   |                                  |
| 86  |     |                 |              |                     |              |   |  |   |                                  |
| 87  |     |                 |              |                     |              |   |  |   |                                  |
| 88  |     |                 |              |                     |              |   |  |   |                                  |
| 89  |     |                 |              |                     |              |   |  |   |                                  |
| 90  |     |                 |              |                     |              |   |  |   |                                  |
| 91  |     |                 |              |                     |              |   |  |   |                                  |
| 92  |     |                 |              |                     |              |   |  |   |                                  |
| 93  |     |                 |              |                     |              |   |  |   |                                  |
| 94  |     |                 |              |                     |              |   |  |   |                                  |
| 95  |     |                 |              |                     |              |   |  |   |                                  |

Subsequent to soil sampling, hole was tremied with grout.

| O'BRIEN & GERE ENGINEERS, INC.   |     |                 |              |                     |              | TEST BORING LOG   | REPORT OF BORING<br>ST-L-D               |   |                                  |
|--|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|
| Client: Solutia Inc.   |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb           |  | Page 1 of 4<br>Location: S.E. of Site L   |                                  |
| Proj. Loc: Sauget Area 1   |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 01/11/00<br>End Date: 01/12/00  |                                  |
| File No.: 10040/23548  |     |                 |              |                     |              |   |  | Screen <input type="checkbox"/> = <input type="checkbox"/> 1<br>Riser <input type="checkbox"/>                        |                                  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: William E. Wright, RG |     |                 |              |                     |              |   |  | Grout <input type="checkbox"/><br>Sand Pack <input type="checkbox"/><br>Bentonite <input checked="" type="checkbox"/> |                                  |
| Depth<br>Below<br>Grade  | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |
| 0  | 1   | 0-2             | 1            | 24/12               | 3            | Dark brown, soft clayey soil to 0.5 ft                          |  |   | 0.0                              |
|  |     |                 | 1            |                     |              | Pale yellowish brown 10YR6/2, dry, silty, very                  |  |   |                                  |
| 1  |     |                 | 2            |                     |              | fine sand; loose  |  |   |                                  |
|  |     |                 | 1            |                     |              |   |  |   |                                  |
| 2  | 2   | 2-4             | 1            | 24/18               | 2            | Pale yellowish brown 10YR6/2, dry, loose, silty, very           |  |   | 0.0                              |
|  |     |                 | 1            |                     |              | fine sand; some clay  |  |   |                                  |
| 3  |     |                 | 1            |                     |              |   |  |   |                                  |
|  |     |                 | 1            |                     |              |   |  |   |                                  |
| 4  | 3   | 4-6             | 4            | 24/13               | 5            | Same as above   |  |   | 0.0                              |
|  |     |                 | 3            |                     |              |   |  |   |                                  |
| 5  |     |                 | 2            |                     |              |   |  |   |                                  |
|  |     |                 | 3            |                     |              |   |  |   |                                  |
| 6  | 4   | 6-8             | 2            | 24/16               | 6            | Same as above   |  |   | 0.0                              |
|  |     |                 | 3            |                     |              |   |  |   |                                  |
| 7  |     |                 | 3            |                     |              |   |  |   |                                  |
|  |     |                 | 3            |                     |              |   |  |   |                                  |
| 8  | 5   | 8-10            | 2            | 24/16               | 4            | Same as above   |  |   | 0.0                              |
|  |     |                 | 2            |                     |              |   |  |   |                                  |
| 9  |     |                 | 2            |                     |              |   |  |   |                                  |
|  |     |                 | 2            |                     |              | Wet at approx. 9.75 ft BEG                                      |  |   |                                  |
| 10   | 6   | 10-12           | 2            | 24/18               | 5            |   |  |   |                                  |
|  |     |                 | 2            |                     |              |   |  |   |                                  |
| 11   |     |                 | 3            |                     |              |   |  |   |                                  |
|  |     |                 | 5            |                     |              |   |  |   |                                  |
| 12   | 7   | 12-14           | 4            | 24/15               | 12           | Moderate yellowish brown 10YR5/4, silty, fine to very fine sand |  |   | 0.0                              |
|  |     |                 | 7            |                     |              | Same wet, moderate yellowish brown 10YR5/4, silty,              |  |   |                                  |
| 13   |     |                 | 5            |                     |              | fine to very fine sand  |  |   |                                  |
|  |     |                 | 5            |                     |              |   |  |   |                                  |
| 14   | 8   | 14-16           | 4            | 24/14               | 16           | Pale yellowish brown 10YR6/2, fine, wet sand; trace             |  |   | 0.0                              |
|  |     |                 | 7            |                     |              | to some silt  |  |   |                                  |
| 15   |     |                 | 9            |                     |              |   |  |   |                                  |
|  |     |                 | 11           |                     |              |   |  |   |                                  |
| 16   | 9   | 16-18           | 3            | 24/18               | 14           | Same as above   |  |   | 0.0                              |
|  |     |                 | 6            |                     |              |   |  |   |                                  |
| 17   |     |                 | 8            |                     |              |   |  |   |                                  |
|  |     |                 | 14           |                     |              |   |  |   |                                  |
| 18   | 10  | 18-20           | 6            | 24/10               | 18           | Same as above   |  |   | 0.0                              |
|  |     |                 | 8            |                     |              |   |  |   |                                  |
| 19   |     |                 | 10           |                     |              |   |  |   |                                  |
|  |     |                 | 14           |                     |              |   |  |   |                                  |
| 20   | 11  | 20-22           | 8            | 24/13               | 29           | Moderate yellowish brown 10YR5/4 very fine gravel,              |  |   | 0.0                              |
|  |     |                 | 12           |                     |              | sand; trace to some silt  |  |   |                                  |
| 21   |     |                 | 17           |                     |              |   |  |   |                                  |
|  |     |                 | 18           |                     |              |   |  |   |                                  |
| 22   | 12  | 22-24           | 10           | 24/24               | 21           | Same as above; with some coarse sand                            |  |   | 0.0                              |
|  |     |                 | 10           |                     |              |   |  |   |                                  |
| 23   |     |                 | 11           |                     |              |   |  |   |                                  |
|  |     |                 | 12           |                     |              |   |  |   |                                  |
| Boring collapsed and grouted to 3 feet below surface, 0-3 feet restored with surface soils.    |     |                 |              |                     |              |   |  |   |                                  |

| O'BRIEN & GERE ENGINEERS, INC.   |     |                 |              |                     |              | TEST BORING LOG  |  | REPORT OF BORING<br>ST-L-D  |                                  |  |  |
|--|-----|-----------------|--------------|---------------------|--------------|--|--|---|----------------------------------|--|--|
| Client: Solutia Inc.   |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb  |  | Page 2 of 4<br>Location: S.E. of Site L   |                                  |  |  |
| Proj. Loc: Sauget Area 1   |     |                 |              |                     |              | Fall: 30"  |  | Start Date: 01/11/00<br>End Date: 01/12/00  |                                  |  |  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: William E. Wright, RG |     |                 |              |                     |              | Screen<br>Riser  |  | <input type="checkbox"/> Grout<br><input type="checkbox"/> Sand Pack<br><input checked="" type="checkbox"/> Bentonite |                                  |  |  |
| Depth<br>Below<br>Grade  | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description   | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |  |  |
| 24   | 13  | 24-25           | 9            | 24/18               | 32           | Moderate yellowish brown 10YR5/4, fine to medium<br>grained sand, grading downward to fine sand; wet |  |   | 0.0                              |  |  |
|  |     |                 | 15           |                     |              |  |  |   |                                  |  |  |
| 25   |     |                 | 17           |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 22           |                     |              |  |  |   |                                  |  |  |
| 26   | 14  | 26-28           | 5            | 24/18               | 12           | Moderate yellowish brown 10YR5/4, fine grained sand<br>with some coarse sand; wet                    |  |   | 0.0                              |  |  |
|  |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
| 27   |     |                 | 5            |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 9            |                     |              |  |  |   |                                  |  |  |
| 28   | 15  | 28-30           | 3            | 24/12               | 9            | Same as above; darker (dusky yellowish brown 10YR2/2)<br>in tip                                      |  |   | 0.0                              |  |  |
|  |     |                 | 3            |                     |              |  |  |   |                                  |  |  |
| 29   |     |                 | 6            |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 8            |                     |              |  |  |   |                                  |  |  |
| 30   | 16  | 30-32           | 9            | 24/16               | 28           | Pale yellowish brown 10YR6/2, wet, fine grained sand<br>with some medium-coarse sand                 |  |   | 0.0                              |  |  |
|  |     |                 | 15           |                     |              |  |  |   |                                  |  |  |
| 31   |     |                 | 13           |                     |              | 0.5" fine gravel seam at approx. 31 ft   |  |   |                                  |  |  |
|  |     |                 | 12           |                     |              |  |  |   |                                  |  |  |
| 32   | 17  | 32-34           | 9            | 24/14               | 19           | Same as above to 33 ft   |  |   | 0.0                              |  |  |
|  |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
| 33   |     |                 | 12           |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 16           |                     |              |  |  |   |                                  |  |  |
| 34   | 18  | 34-36           | 13           | 24/16               | 36           | Light olive gray 5Y5/2, wet, fine grained sand; trace<br>to some medium to coarse sand               |  |   | 0.0                              |  |  |
|  |     |                 | 17           |                     |              |  |  |   |                                  |  |  |
| 35   |     |                 | 19           |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 25           |                     |              |  |  |   |                                  |  |  |
| 36   | 19  | 36-38           | 11           | 24/12               | 46           | Olive gray 5Y4/1, wet, fine grained sand   |  |   | 0.0                              |  |  |
|  |     |                 | 21           |                     |              |  |  |   |                                  |  |  |
| 37   |     |                 | 25           |                     |              | Possible fine gravel seam (1") at 37 ft  |  |   |                                  |  |  |
|  |     |                 | 22           |                     |              |  |  |   |                                  |  |  |
| 38   | 20  | 38-40           | 6            | 24/14               | 22           | Same as above  |  |   | 0.0                              |  |  |
|  |     |                 | 11           |                     |              |  |  |   |                                  |  |  |
| 39   |     |                 | 11           |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 12           |                     |              |  |  |   |                                  |  |  |
| 40   | 21  | 40-42           | 10           | 24/12               | 23           | Medium gray N6, wet, fine grained sand; trace silt   |  |   | 0.0                              |  |  |
|  |     |                 | 11           |                     |              |  |  |   |                                  |  |  |
| 41   |     |                 | 12           |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 10           |                     |              |  |  |   |                                  |  |  |
| 42   | 22  | 42-44           | 8            | 24/12               | 14           | Medium dark gray N4, medium to coarse sand;<br>trace to some fine gravel; some fine sand             |  |   | 0.0                              |  |  |
|  |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
| 43   |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
| 44   | 23  | 44-46           | 5            | 24/12               | 18           | Same as above  |  |   | 0.0                              |  |  |
|  |     |                 | 9            |                     |              |  |  |   |                                  |  |  |
| 45   |     |                 | 9            |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 8            |                     |              |  |  |   |                                  |  |  |
| 46   | 24  | 46-48           | 4            | 24/12               | 15           | Medium dark gray N4 fine sand; trace to some<br>coarse sand and fine gravel                          |  |   | 0.0                              |  |  |
|  |     |                 | 7            |                     |              |  |  |   |                                  |  |  |
| 47   |     |                 | 8            |                     |              |  |  |   |                                  |  |  |
|  |     |                 | 11           |                     |              |  |  |   |                                  |  |  |





| O'BRIEN & GERE ENGINEERS, INC.  |     |                 |              |                     |              | TEST BORING LOG  |  | REPORT OF BORING<br>ST-N-D   |                                  |  |  |
|---|-----|-----------------|--------------|---------------------|--------------|--|--|--|----------------------------------|--|--|
| Client: Solutia Inc.  |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                                    |  | Page 1 of 4<br>Location: Site N  |                                  |  |  |
| Proj. Loc: Sauget Area 1  |     |                 |              |                     |              | Fall: 30"  |  | Start Date: 12/13/99<br>End Date: 12/15/99   |                                  |  |  |
| File No.: 10040/23548   |     |                 |              |                     |              |  |  | Screen <input type="checkbox"/> Grout<br>Riser <input type="checkbox"/> Sand Pack<br><input checked="" type="checkbox"/> Bentonite |                                  |  |  |
| Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: Tony Finch |     |                 |              |                     |              |  |  |  |                                  |  |  |
| Depth<br>Below<br>Grade   | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description   | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed  | Field<br>Testing<br>HNU<br>(ppm) |  |  |
| 0   | 1   |                 | 5            | 24"/18"             | 15           | Dark yellowish brown 10YR4/2, damp, firm, sandy clay; small pieces of brick and concrete | OH                                       |  | 0.0                              |  |  |
|   |     |                 | 8            |                     |              |  |  |  |                                  |  |  |
| 1   |     |                 | 7            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 5            |                     |              |  |  |  |                                  |  |  |
| 2   | 2   |                 | 1            | 24"/24"             | 7            | Moderate yellowish brown 10YR5/4, damp soft clay; trace silt                             |  |  | 0.0                              |  |  |
|   |     |                 | 3            |                     |              |  |  |  |                                  |  |  |
| 3   |     |                 | 4            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 5            |                     |              |  |  |  |                                  |  |  |
| 4   | 3   |                 | 1            | 24"/18"             | 9            | Same as above  |  |  |                                  |  |  |
|   |     |                 | 4            |                     |              |  |  |  |                                  |  |  |
| 5   |     |                 | 5            |                     |              |  | 5'                                       |  |                                  |  |  |
|   |     |                 | 4            |                     |              | Moderate yellowish brown 10YR5/4, damp, loose fine sand; trace silt                      | SW                                       |  | 0.0                              |  |  |
| 6   | 4   |                 | 2            | 24"/12"             | 2            | Moderate yellowish brown 10YR5/4, wet, very loose fine sand; trace silt                  |  |  |                                  |  |  |
|   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
| 7   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 2            |                     |              |  |  |  |                                  |  |  |
| 8   | 5   |                 | 1            | 24"/12"             | 2            | Moderate yellowish brown 10YR5/4, wet, very loose silty sand                             | SM                                       |  | 0.0                              |  |  |
|   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
| 9   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
| 10  | 6   |                 | —            | 24"/18"             | 2            | Same as above  |  |  | 0.0                              |  |  |
|   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
| 11  |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 1            |                     |              |  |  |  |                                  |  |  |
| 12  | 7   |                 | 1            | 24"/24"             | 9            | Moderate yellowish brown 10YR5/4, wet, very loose fine sand; some silt                   | SW                                       |  | 0.0                              |  |  |
|   |     |                 | 4            |                     |              |  |  |  |                                  |  |  |
| 13  |     |                 | 5            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 7            |                     |              |  |  |  |                                  |  |  |
| 14  | 8   |                 | 2            | 24"/18"             | 7            | Moderate yellowish brown 10YR5/4, wet, loose fine sand; trace silt                       | SW                                       |  | 0.0                              |  |  |
|   |     |                 | 2            |                     |              |  |  |  |                                  |  |  |
| 15  |     |                 | 5            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 7            |                     |              |  |  |  |                                  |  |  |
| 16  | 9   |                 | 7            | 24"/12"             | 11           | Same as above  |  |  | 0.0                              |  |  |
|   |     |                 | 6            |                     |              |  |  |  |                                  |  |  |
| 17  |     |                 | 5            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 8            |                     |              |  |  |  |                                  |  |  |
| 18  | 10  |                 | 4            | 24"/12"             | 13           | Same as above; trace medium gravel   | SW                                       |  | 0.0                              |  |  |
|   |     |                 | 6            |                     |              |  |  |  |                                  |  |  |
| 19  |     |                 | 7            |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 11           |                     |              |  |  |  |                                  |  |  |
| 20  | 11  |                 | 2            | 24"/12"             | 17           | Same as above; trace fine gravel   |  |  | 0.0                              |  |  |
|   |     |                 | 7            |                     |              |  |  |  |                                  |  |  |
| 21  |     |                 | 10           |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 9            |                     |              |  |  |  |                                  |  |  |
| 22  | 12  |                 | 5            | 24"/12"             | 18           | Moderate yellowish brown 10YR5/4, wet, loose, fine sand; trace silt                      | SW                                       |  | 0.0                              |  |  |
|   |     |                 | 8            |                     |              |  |  |  |                                  |  |  |
| 23  |     |                 | 10           |                     |              |  |  |  |                                  |  |  |
|   |     |                 | 10           |                     |              |  |  |  |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC.   |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-N-D  |                                  |  |  |
|----------------------------------|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|--|--|
| Client: Solutia Inc.             |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                               |  | Page 2 of 4<br>Location: Site N   |                                  |  |  |
| Proj. Loc: Sauget Area 1         |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/13/99<br>End Date: 12/15/99  |                                  |  |  |
| File No.: 10040/23548            |     |                 |              |                     |              |   |  | Screen <input type="checkbox"/> Grout<br>Riser <input type="checkbox"/> Sand Pack<br><input type="checkbox"/> Bentonite |                                  |  |  |
| Boring Company: Harriss Drilling |     |                 |              |                     |              |   |  |   |                                  |  |  |
| Foreman: Tim Crank               |     |                 |              |                     |              |   |  |   |                                  |  |  |
| OBG Geologist: Tony Finch        |     |                 |              |                     |              |   |  |   |                                  |  |  |
| Depth<br>Below<br>Grade          | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |  |  |
| 24                               | 13  |                 | 4            | 24"/12"             | 16           | Moderate yellowish brown 10YR 5/4, wet,<br>loose, fine to medium sand; trace silt   | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 6            |                     |              |   |  |   |                                  |  |  |
| 25                               |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
| 26                               | 14  |                 | 4            | 24"/12"             | 19           | Same as above   |  |   | 0.0                              |  |  |
|                                  |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 27                               |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 12           |                     |              |   |  |   |                                  |  |  |
| 28                               | 15  |                 | 5            | 24"/12"             | 9            | Moderate yellowish brown 10YR 5/4, wet,<br>loose, medium to coarse sand; trace silt | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 29                               |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 30                               | 16  |                 | 5            | 24"/12"             | 21           | Moderate yellowish brown 10YR 5/4, wet,<br>medium dense fine sand; trace silt       | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 12           |                     |              |   |  |   |                                  |  |  |
| 31                               |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 32                               | 17  |                 | 4            | 24"/12"             | 7            | Wet, loose, coarse sand; trace silt   | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 33                               |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 34                               | 18  |                 | 6            | 24"/18"             | 15           | Same as above   |  |   | 0.0                              |  |  |
|                                  |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 35                               |     |                 | 8            |                     |              | Medium gray N5, wet, loose, fine sand;<br>trace silt                                | SW                                       |   |                                  |  |  |
|                                  |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
| 36                               | 19  |                 | 6            | 24"/12"             | 18           | Same as above   |  |   | 0.0                              |  |  |
|                                  |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
| 37                               |     |                 | 8            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 38                               | 20  |                 | 3            | 24"/12"             | 9            | Same as above   |  |   | 0.0                              |  |  |
|                                  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 39                               |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 40                               | 21  |                 | 4            | 24"/12"             | 11           | Same as above   |  |   | 0.0                              |  |  |
|                                  |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 41                               |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 11           |                     |              |   |  |   |                                  |  |  |
| 42                               | 22  |                 | 9            | 24"/12"             | 14           | Same as above; grades/intermixed medium sand  | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 43                               |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 6            |                     |              |   |  |   |                                  |  |  |
| 44                               | 23  |                 | 5            | 24"/12"             | 11           | Medium gray N5, wet, loose, medium to coarse<br>intermixed sand; trace silt         | SW                                       |   | 0.0                              |  |  |
|                                  |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 45                               |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 46                               | 24  |                 | 3            | 24"/6"              | 4            | Wet, loose, coarse sand intermixed with fine to<br>medium gravel                    | SP                                       |   | 0.0                              |  |  |
|                                  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
| 47                               |     |                 | 2            |                     |              |   |  |   |                                  |  |  |
|                                  |     |                 | 2            |                     |              |   |  |   |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC. |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-N-D  |                                  |  |  |
|--------------------------------|-----|-----------------|--------------|---------------------|--------------|---|--|---|----------------------------------|--|--|
| Client: Solutia Inc.           |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                                   |  | Page 3 of 4<br>Location: Site N                                   |                                  |  |  |
| Proj. Loc: Sauget Area 1       |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/13/99<br>End Date: 12/15/99                        |                                  |  |  |
| File No.: 10040/23548          |     |                 |              |                     |              | Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: Tony Finch     |  | Screen <input type="checkbox"/><br>Riser <input type="checkbox"/> |                                  | Grout <input type="checkbox"/><br>Sand Pack <input type="checkbox"/><br>Bentonite <input type="checkbox"/> |  |
| Depth<br>Below<br>Grade        | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed   | Field<br>Testing<br>HNU<br>(ppm) |  |  |
| 48                             | 25  |                 | 1            | 24"/18"             | 5            | Medium dark gray N5, wet, coarse sand;<br>little fine gravel                            | SW                                       |   | 0.0                              |  |  |
|                                |     |                 | 1            |                     |              |   |  |   |                                  |  |  |
| 49                             |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 50                             | 26  |                 | 5            | 24"/24"             | 12           | Medium gray N5, wet, loose, medium to coarse<br>sand; trace silt                        |  |   |                                  |  |  |
|                                |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
| 51                             |     |                 | 7            |                     |              | Wet, coarse sand and fine gravel  | SW                                       |   |                                  |  |  |
|                                |     |                 | 11           |                     |              | Medium gray N5, wet, loose, fine sand; trace silt                                       |  |   |                                  |  |  |
| 52                             | 27  |                 | 4            | 24"/12"             | 17           | Wet, loose, coarse sand and fine gravel   |  |   | 0.0                              |  |  |
|                                |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 53                             |     |                 | 10           |                     |              | Medium gray N5, wet, loose, fine sand; trace silt                                       |  |   |                                  |  |  |
|                                |     |                 | 17           |                     |              |   |  |   |                                  |  |  |
| 54                             | 28  |                 | 3            | 24"/12"             | 15           |   |  |   | 0.0                              |  |  |
|                                |     |                 | 6            |                     |              |   |  |   |                                  |  |  |
| 55                             |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 16           |                     |              |   |  |   |                                  |  |  |
| 56                             | 29  |                 | 7            | 24"/18"             | 23           | Medium dark gray N4, wet, loose, fine sand;<br>trace silt                               | SW                                       |   | 0.0                              |  |  |
|                                |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 57                             |     |                 | 14           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 14           |                     |              |   |  |   |                                  |  |  |
| 58                             | 30  |                 | 2            | 24"/18"             | 10           | Same as above   |  |   | 0.0                              |  |  |
|                                |     |                 | 4            |                     |              |   |  |   |                                  |  |  |
| 59                             |     |                 | 6            |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
| 60                             | 31  |                 | 4            | 24"/18"             | 18           | Same as above   |  |   | 0.0                              |  |  |
|                                |     |                 | 8            |                     |              |   |  |   |                                  |  |  |
| 61                             |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
| 62                             | 32  |                 | 9            | 24"/12"             | 18           | Same as above   |  |   | 0.0                              |  |  |
|                                |     |                 | 7            |                     |              |   |  |   |                                  |  |  |
| 63                             |     |                 | 11           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 11           |                     |              | Wet, medium sand; trace silt  |  |   |                                  |  |  |
| 64                             | 33  |                 | 5            | 24"/18"             | 19           | Medium dark gray N5, wet, loose, fine to medium sand;<br>little fine gravel; trace silt | SW                                       |   | 0.0                              |  |  |
|                                |     |                 | 9            |                     |              |   |  |   |                                  |  |  |
| 65                             |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 14           |                     |              |   |  |   |                                  |  |  |
| 66                             | 34  |                 | 11           | 24"/18"             | 23           | Medium dark gray N4, wet, medium dense,<br>medium sand; trace silt                      |  |   | 0.0                              |  |  |
|                                |     |                 | 11           |                     |              |   |  |   |                                  |  |  |
| 67                             |     |                 | 12           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 12           |                     |              |   |  |   |                                  |  |  |
| 68                             | 35  |                 | 3            | 24"/18"             | 8            | Medium gray N5, wet, loose, medium to coarse<br>sand; little fine gravel; trace silt    | SW                                       |   | 0.0                              |  |  |
|                                |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 69                             |     |                 | 5            |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 8            |                     |              |   |  |   |                                  |  |  |
| 70                             | 36  |                 | 1            | 24"/18"             | 13           | Wet, loose, coarse sand and fine gravel;<br>trace silt                                  |  |   | 0.0                              |  |  |
|                                |     |                 | 3            |                     |              |   |  |   |                                  |  |  |
| 71                             |     |                 | 10           |                     |              |   |  |   |                                  |  |  |
|                                |     |                 | 18           |                     |              |   |  |   |                                  |  |  |

| O'BRIEN & GERE ENGINEERS, INC. |     |                 |              |                     |              | TEST BORING LOG   |  | REPORT OF BORING<br>ST-N-D                 |                                  |                                 |  |
|--------------------------------|-----|-----------------|--------------|---------------------|--------------|---|--|--|----------------------------------|---------------------------------|--|
| Client: Solutia Inc.           |     |                 |              |                     |              | Sampler: 2" Diameter<br>Split Spoon<br>Hammer: 140 lb                               |  | Page 4 of 4<br>Location: Site N            |                                  |                                 |  |
| Proj. Loc: Sauget Area 1       |     |                 |              |                     |              | Fall: 30"   |  | Start Date: 12/13/99<br>End Date: 12/15/99 |                                  |                                 |  |
| File No.: 10040/23548          |     |                 |              |                     |              | Boring Company: Harriss Drilling<br>Foreman: Tim Crank<br>OBG Geologist: Tony Finch |  | Screen<br>Riser                            |                                  | Grout<br>Sand Pack<br>Bentonite |  |
| Depth<br>Below<br>Grade        | No. | Depth<br>(feet) | Blows<br>/6" | Penetr/<br>Recovery | "N"<br>Value | Sample Description  | Stratum<br>Change<br>General<br>Descript | Equip.<br>Installed                        | Field<br>Testing<br>HNU<br>(ppm) |                                 |  |
| 72                             | 37  |                 | 2            | 24"/24"             | 11           | Medium dark gray N4, coarse grained sand<br>and fine gravel; trace silt             | SP                                       |  | 0.0                              |                                 |  |
|                                |     |                 | 4            |                     |              |   |  |  |                                  |                                 |  |
| 73                             |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
|                                |     |                 | 10           |                     |              |   |  |  |                                  |                                 |  |
| 74                             | 38  |                 | 4            | 24"/24"             | 13           | Intermixed, wet, loose, medium to coarse sand;<br>trace silt                        | SP                                       |  | 0.0                              |                                 |  |
|                                |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
| 75                             |     |                 | 8            |                     |              |   |  |  |                                  |                                 |  |
|                                |     |                 | 3            |                     |              |   |  |  |                                  |                                 |  |
| 76                             | 39  |                 | 3            | 24"/24"             | 12           | Intermixed, wet, loose, coarse sand and fine gravel;<br>trace silt                  | SP                                       |  | 0.0                              |                                 |  |
|                                |     |                 | 5            |                     |              |   |  |  |                                  |                                 |  |
| 77                             |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
|                                |     |                 | 7            |                     |              |   |  |  |                                  |                                 |  |
| 78                             | 40  |                 | 1            | 24"/24"             | 2            | Same as above   |  |  |                                  |                                 |  |
|                                |     |                 | 1            |                     |              |   |  |  |                                  |                                 |  |
| 79                             |     |                 | 1            |                     |              |   |  |  |                                  |                                 |  |
|                                |     |                 | 1            |                     |              |   |  |  |                                  |                                 |  |
| 80                             | 41  |                 |              |                     |              | EOB @ 80 fbg  |  |  |                                  |                                 |  |
| 81                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 82                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 83                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 84                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 85                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 86                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 87                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 88                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 89                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 90                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 91                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 92                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 93                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 94                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |
| 95                             |     |                 |              |                     |              |   |  |  |                                  |                                 |  |

## **EVALUATION OF SEPTEMBER 1999 DNAPL THICKNESS DATA ON TABLE 4-0C**

Sauget Area 1, Sauget and Cahokia, Illinois

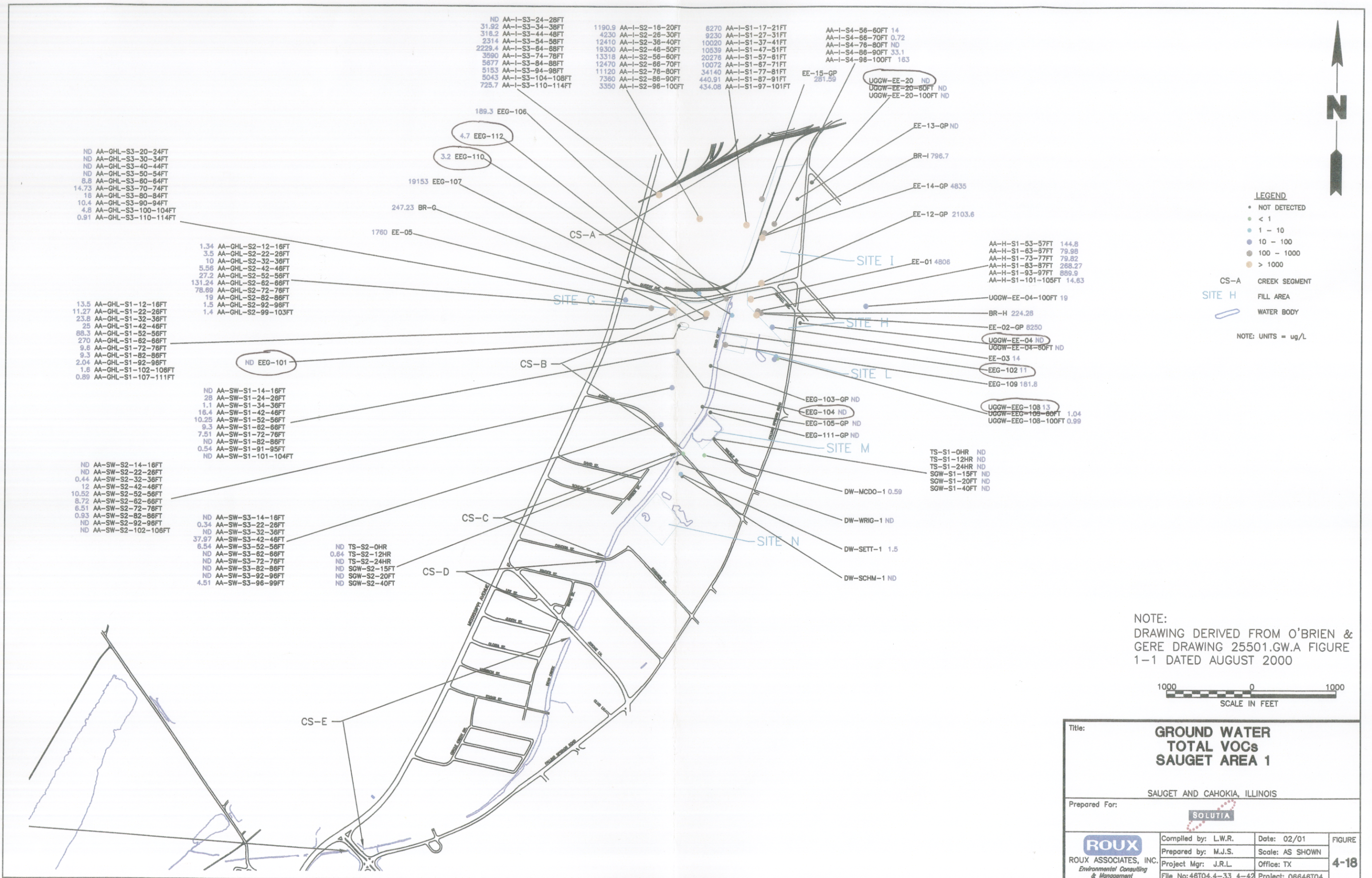
### **ATTACHMENT 5 – VOCs AND SVOCs IN GROUNDWATER AT SAUGET AREA 1**

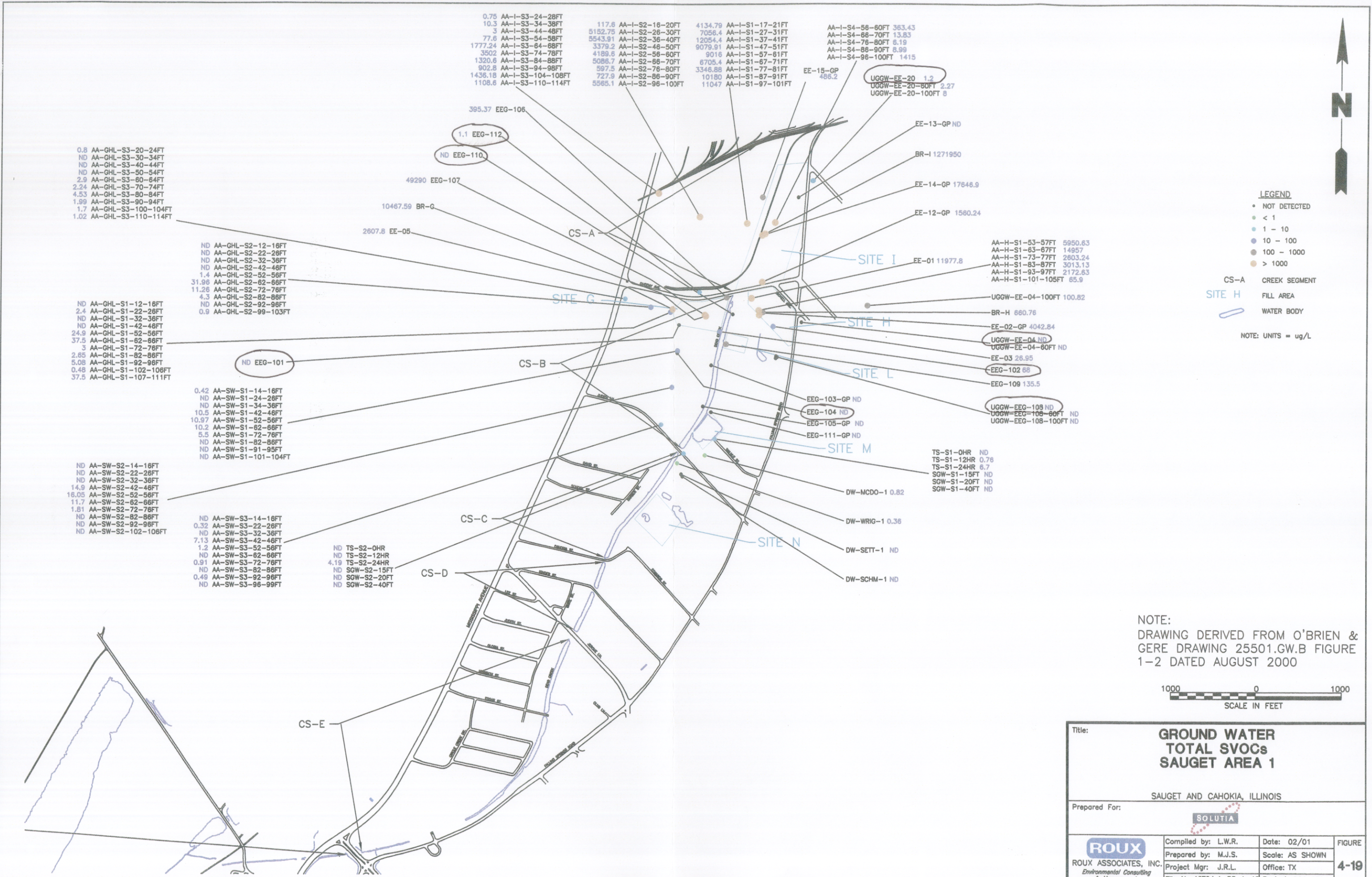
Figure 4-18: Ground Water, Total VOCs, Sauget Area 1

*(Source: EE/CA and RI/FS Report, Roux Associates, 2001)*

Figure 4-19: Ground Water, Total SVOCs, Sauget Area 1

*(Source: EE/CA and RI/FS Report, Roux Associates, 2001)*





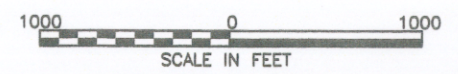
LEGEND

- NOT DETECTED
- < 1
- 1 - 10
- 10 - 100
- 100 - 1000
- > 1000

- CS-A CREEK SEGMENT
- SITE H FILL AREA
- WATER BODY

NOTE: UNITS = ug/L

NOTE:  
DRAWING DERIVED FROM O'BRIEN &  
GERE DRAWING 25501.GW.B FIGURE  
1-2 DATED AUGUST 2000



|  |                          |                   |                       |
|--|--------------------------|-------------------|-----------------------|
| Title:<br><b>GROUND WATER<br/>TOTAL SVOCs<br/>SAUGET AREA 1</b>                  |                          |                   |                       |
| SAUGET AND CAHOKIA, ILLINOIS   |                          |                   |                       |
| Prepared For:<br><b>SOLUTIA</b>  |                          |                   |                       |
| <b>ROUX</b><br>ROUX ASSOCIATES, INC.<br>Environmental Consulting<br>& Management | Compiled by: L.W.R.      | Date: 02/01       | FIGURE<br><b>4-19</b> |
|  | Prepared by: M.J.S.      | Scale: AS SHOWN   |                       |
|  | Project Mgr: J.R.L.      | Office: TX        |                       |
|  | File No: 46T04.4-33 4-42 | Project: 06646T04 |                       |